DNRP
KingStat Improving Government Service and Performance 2006

Welcome to KingStat

June 30, 2007

I am pleased to present the Department of Natural Resources and Parks KingStat Web site. This site helps achieve our goals of improving transparency in government, fostering public involvement and pursuing excellence in public agency accountability.

Ron Sims
King County Executive

For many years, the King County Department of Natural Resources and Parks (DNRP) has successfully used performance information to enhance service delivery, improve program effectiveness and maintain accountability to the public and stakeholder groups.

Theresa Jennings
DNRP Director

For the past three years, the Association of Government Accountants (AGA) has honored King County Department of Natural Resources and Parks (DNRP) with the national Certificate of Excellence in Service Efforts and Accomplishments Award for their performance reporting efforts.

Each year AGA has offered DNRP suggestions for improving its performance reporting efforts, which have influenced the development of this Web site. Our goal in developing this site was to allow residents and stakeholders both a quick overview of and detailed information about our region's environmental conditions and how effective this agency is at improving these conditions.

The KingStat program has helped clarify performance reporting expectations for departments, and DNRP is responding by enhancing how its performance information is presented to policy-makers and the public.

These pages combines maps, charts, graphs and Presented below is DNRP's current mission and goal statements. The graphs, maps and charts presented in this KingStat Web site summarize changes to environmental conditions and the degree we've achieved our targets.

DNRP mission:

Foster environmental stewardship and strengthen communities by providing regional parks, protecting the region's water, air, land and natural habitats, and reducing, safely disposing of and creating resources from wastewater and solid waste.

DNRP goals:

1. **Environmental Quality**
   Deliver high quality environmental services that protect and restore the environment, enhance our community, and protect public health and safety.

Visual representation of DNRP's KingStat Program

News

King County performance reporting wins national awards

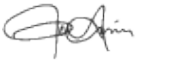
and narratives to provide a more detailed review of environmental trends, drivers for changes, existing responses and priority new actions.

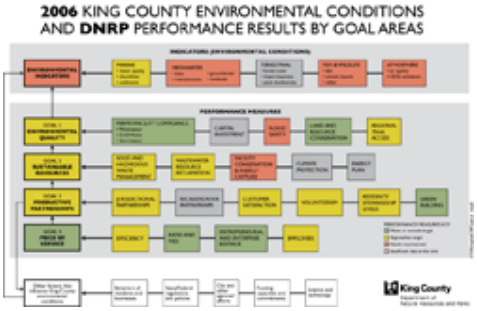
DNRP is striving to improve the transparency of its performance and engage with King County residents, businesses and other stakeholders toward its goal of sustainable, livable communities and a healthy environment.

The renewed focus on regional collaborative action and the need to improve access to performance and conditions information are driving DNRP to increase reporting frequency and improve accessibility through Web-based reporting.

Performance measures are internal and more directly controlled by DNRP programs and initiatives. Environmental indicators are linked to external conditions, which are influenced by the activities and behaviors of many factors, including households, businesses and other agencies within King County.

I applaud DNRP's leadership in developing this pilot Web site and look forward to a similar presentation of performance information for all county programs in the future.





2. **Sustainable Resources**
   Create resources from waste, reduce emissions, and increase the efficiency of facilities and operations.

3. **Productive Partnerships**
   Collaborate with partners throughout the region to achieve improved environmental and community outcomes.

4. **Price of Service** Be efficient, effective and fiscally responsible to ensure ratepayer value.

As DNRP Director, I am proud to have our performance information serve as the pilot for King County's KingStat Web site. By clearly stating our goals, honestly assessing our progress in achieving those goals, and accurately reporting the results to citizens, stakeholders and other groups, we seek to learn, improve and build public trust.

Indicators and performance measures are compared against both prior years and targets, and results are shown in a simple green/yellow/red color rating. The summary chart is presented on the following two pages.

The indicators and measures that are included in this site have been greatly improved based on robust feedback we've received from key stakeholders. We continue to seek input on these measures, and we anticipate that the performance information we monitor and learn from will evolve to keep us attuned to and engaged with the emerging natural resource priorities of our region.

Past performance reports generated a great response from the community. This feedback helped us establish open lines of communication with a wide variety of interested citizens and user groups. They have told us what matters to them, and we've listened. We are all grateful for their ongoing interest and participation.

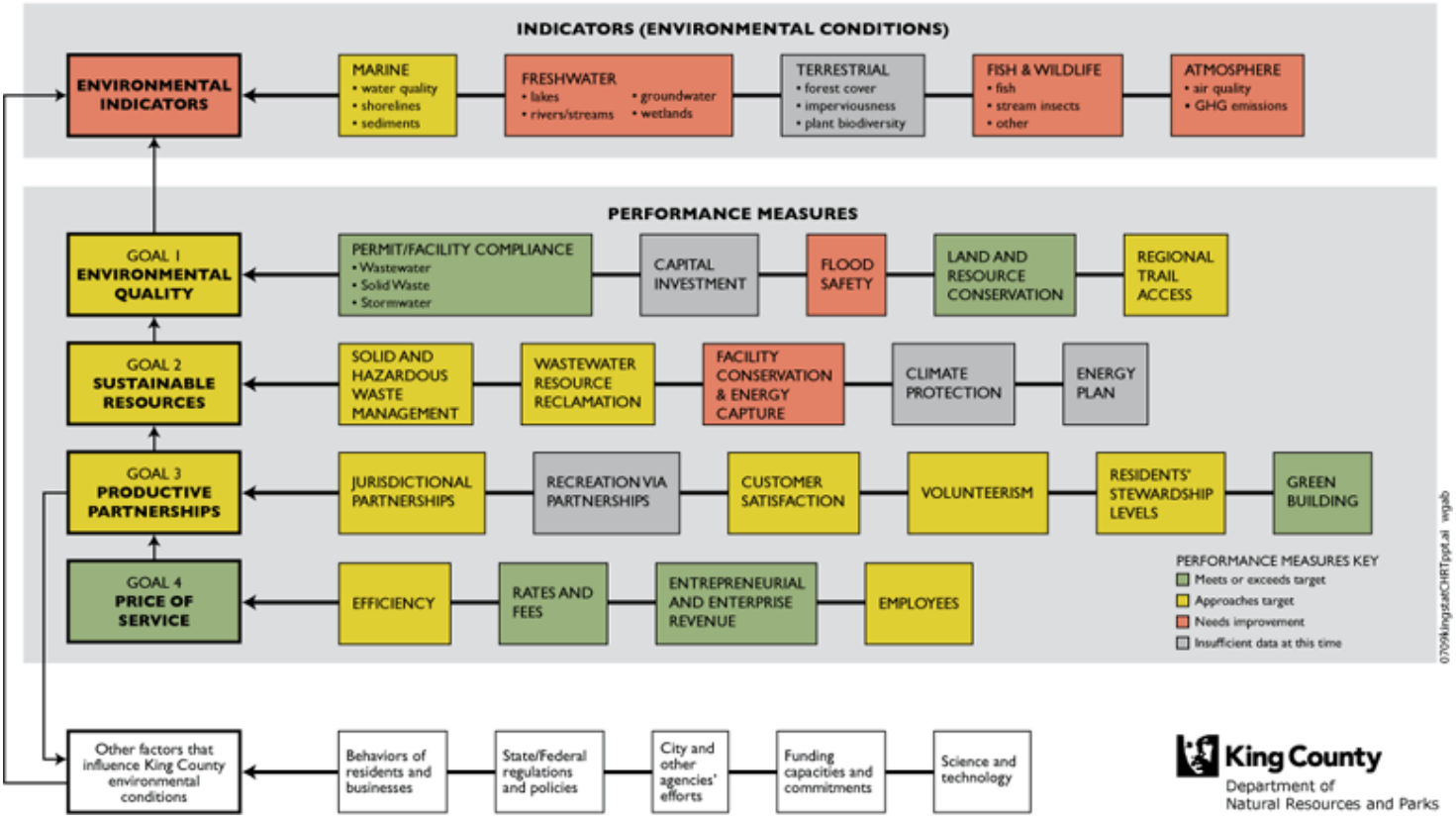
Updated: October 15, 2007

print

HOW ARE WE DOING?

ENVIRONMENTAL INDICATORS					PERFORMANCE MEASURES			
Marine Habitat	Freshwater Habitat	Terrestrial Habitat	Fish and Wildlife	Atmosphere	Environmental Quality	Sustainable Resources	Productive Partnerships	Price of Service

2006 KING COUNTY ENVIRONMENTAL CONDITIONS AND DNRP PERFORMANCE RESULTS BY GOAL AREAS



Updated: October 15, 2007

print

ENVIRONMENTAL INDICATORS - 2006 ARCHIVE

ENVIRONMENTAL INDICATORS					PERFORMANCE MEASURES			
Marine Habitat	Freshwater Habitat	Terrestrial Habitat	Fish and Wildlife	Atmosphere	Environmental Quality	Sustainable Resources	Productive Partnerships	Price of Service

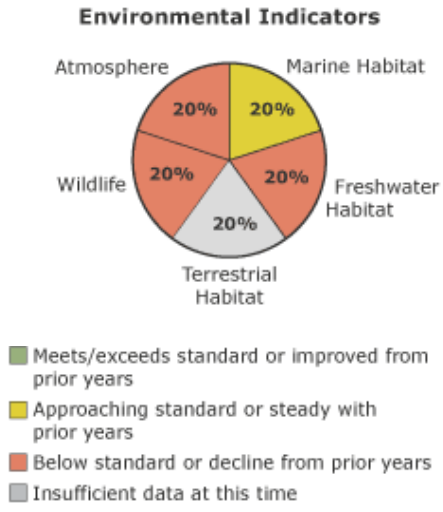
DNRP 2006 ENVIRONMENTAL INDICATORS

2006 Rating:

In simplest terms, indicators are measures of environmental conditions, while performance measures show how DNRP is doing at improving these conditions.

In practice, however, there is not always a clear line between measures that are environmental indicators and those that are measuring our agency's performance.

DNRP distinguishes between environmental indicators and performance measures based on the degree of our influence — measures that have many contributing factors are included as indicators, while measures that are strongly influenced by DNRP policies, programs, and practices are considered performance measures.



Indicators

DNRP KingStat environmental indicators are summarized in five groups:

- Marine
- Freshwater
- Terrestrial
- Wildlife
- Atmosphere

The pie chart at the top of each indicator page provides a high-level summary of that indicator's condition. Readers will find more detailed information on environmental conditions by reviewing the various component measures, while information on how the data is collected can be found at the bottom of the page in "Technical Notes."

Information about these environmental indicators use a simple red/yellow/green/gray designation, where:

- Green signifies meeting or exceeding an adopted standard, a stated goal, or improved from prior years;
- Yellow signifies approaching to within 10 percent of an adopted standard, stated goal or has remained steady with prior years;
- Red signifies being below the standard or goal, or declining from prior years; and
- Gray signifies insufficient data at this time.

WHAT CAN YOU DO?

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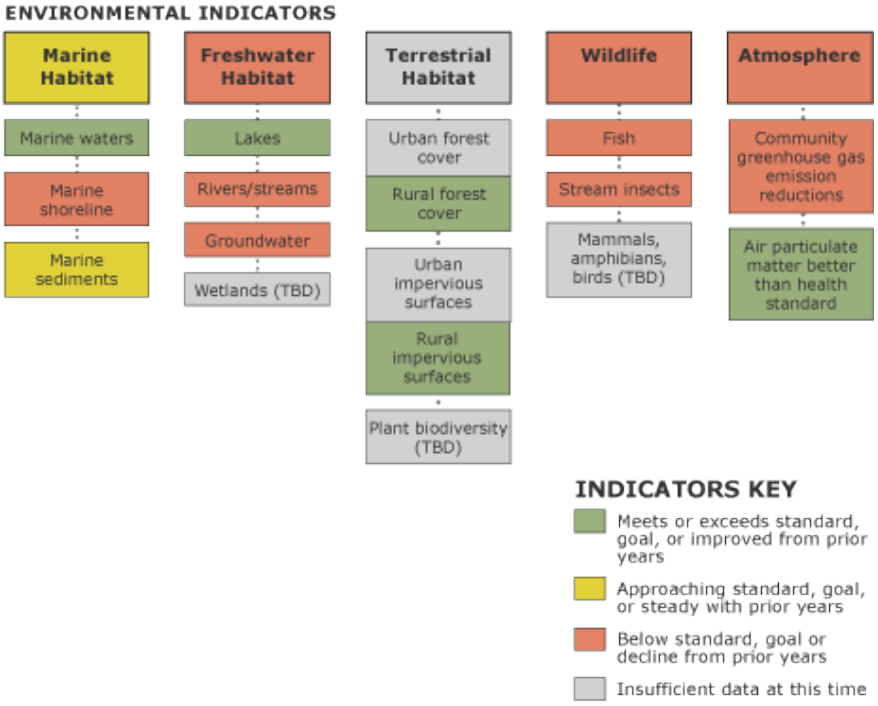
Puget Sound Shoreline Stewardship Guidebook

Embrace Natural Yard Care

Related Information

King County Ecological Lands

DNRP 2006 ENVIRONMENTAL INDICATORS



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- Other reliable environmental data sources for King County
- Adjustments to the weightings for indicators and performance measures
- Mistakes to fix

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Updated: September 28, 2007

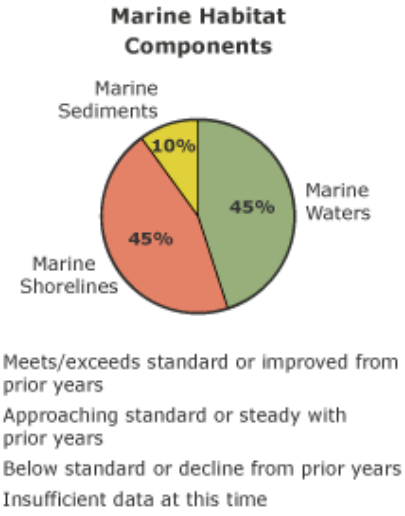
INDICATORS - 2006 ARCHIVE

MARINE HABITAT

2006 Rating: ⇔

Indicator

King County's Marine Habitat Index includes information about the conditions of marine waters, shorelines and sediments. Our weighting system applies 45 percent each of the water quality and shoreline results, and 10 percent of the sediments results toward overall marine habitat quality.



Status

While the quality of open waters in Puget Sound is good, marine habitat conditions in certain areas of King County are severely degraded. Waters that are in protected areas without much current are of concern, including Fauntleroy Cove, Dumas Cove and Quartermaster Harbor. Overall habitat quality is reduced by non-point source pollution, contaminated sediments and the high percentage of shoreline that has been armored with bulkheads and other structures.

Influencing factors

Storm water carrying nutrients from septic systems, chemicals from motor vehicles and phosphorus from fertilizers degrade marine water quality and reduce oxygen levels for the animals that live and depend on Puget Sound habitats. Bulkheads impede natural erosion and cut off the supply of sand, rocks and other natural features that are home to native plant and animal species.

Existing DNRP response

King County safely operates its wastewater treatment and conveyance systems to minimize the flow of nutrients into marine waters. The county's Surface Water Management Program works in unincorporated King County to store and filter storm water, preventing pollutants from flowing into Puget Sound.

Priority new actions

Along with public, non-profit and tribal partners, King County is working to clean up the Lower Duwamish waterway, which feeds directly into Elliott Bay. King County is an important participant in the Puget Sound Partnership, a group of local, state and federal interests that have come together to build the framework for recovering Puget Sound. While still in the development stage, the county expects to implement programs and projects aimed at improving the health of the Sound and its shores. King County encourages property owners to find alternatives to building bulkheads on marine beaches. Our beach stewards program helps raise awareness about the unique and important nature that beaches play on our marine environment.

WHAT CAN YOU DO?

At Home

- Puget Sound Shoreline Stewardship Guidebook
- Shoreline Practices for a Healthy Lake, River or Stream
- Duwamish River Cleanup Coalition

At Work

- Reduce your runoff, get a fee discount
- Learn Best Practices to reduce Stormwater Pollution
- Understand Industrial Waste Discharge Limits

Related Information

- Puget Sound Marine Topics
- Puget Sound Watershed
- Vashon Island Environmental Information
- Puget Sound Partnership Recommendations
- EPA: Lower Duwamish Watershed
- Scientist Concerned For Puget Sound
- A Comprehensive Assessment of the Central Puget Sound Nearshore Ecosystem

What you can do

Properly dispose of harmful chemicals, including unused pharmaceuticals and latex paints. Minimize the use of fertilizers and pesticides by practicing natural yard care. Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash. Consider alternatives to bulkheads and other artificial barriers to marine shorelines.

More information about King County's Water Quality, Shorelines, and Sediments is available by continuing to the pages for these measures:

- Water Quality
- Shorelines
- Sediments

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Updated: September 28, 2007

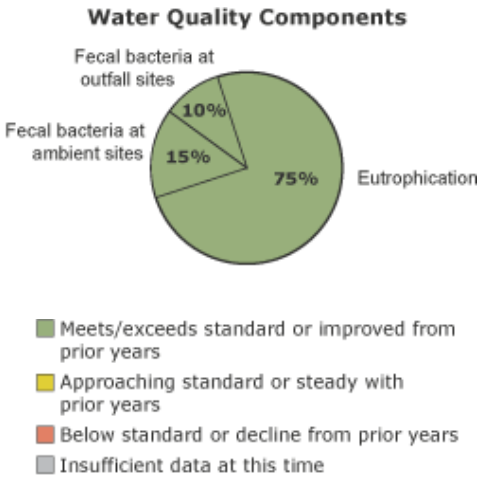
INDICATORS - 2006 ARCHIVE

WATER QUALITY

2006 Rating:

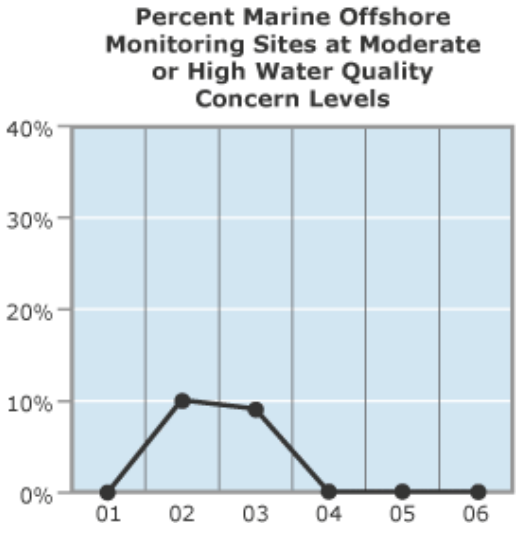
Eutrophication

About this indicator: King County conducts monthly water quality monitoring at 12 offshore locations in Puget Sound. Offshore marine waters in King County are monitored for temperature, salinity, density, dissolved oxygen, nutrients, chlorophyll and fecal coliform bacteria. These variables can be used to assess eutrophication, (the process by which dissolved oxygen concentrations are depressed due to algae growth primarily caused by nutrients), sewage waste (fecal coliform, ammonia), food availability to secondary producers (chlorophyll), and marine water habitat quality (temperature, salinity).



Status: 2006 findings indicate that the water quality at all of the ambient and outfall offshore stations sampled is at a level of lower concern.

The percentage of stations of Moderate or High Concern reached a maximum of 22 percent in 2000 and has declined to zero percent for the past three consecutive years.



Influencing factors: Vertical water density patterns can be indicators of an area's potential sensitivity to developing low dissolved oxygen conditions. Low oxygen conditions are harmful to fish and other aquatic life and may occur as a result of the natural flow of low oxygenated Pacific Ocean water into the deep main basin of Puget Sound, in addition to processes such as eutrophication. Persistently low nitrate concentrations in surface water can indicate a potential sensitivity to nutrient-rich input such as stormwater runoff, industrial waste discharges, septic systems, and flow from rivers. Ammonia can be found at elevated concentrations as a byproduct of sewage, agricultural practices, and fertilizer use in urban areas.

Existing DNRP response: DNRP will continue to operate its wastewater treatment plants and conveyance system effectively to maintain low levels of nutrients discharged into marine waters. Nutrient levels are also addressed by the agency through storm water control management practices. Additionally, DNRP will continue to play an active role in the recently formed Puget Sound Partnership toward improving water quality throughout the entire Puget Sound.

Priority new actions: Stratification intensity and its persistence is beyond King County's influence, but should be monitored as it is an important indicator of areas sensitive to possible water quality

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Shoreline Practices for a Healthy Lake, River or Stream

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Learn Best Practices to reduce Stormwater Pollution

Understand Industrial Waste Discharge Limits

Related Information

Puget Sound Marine Topics

Puget Sound Watershed

Vashon Island Environmental Information

King County marine research vessel "Liberty"

Hood Canal Marine Life Struggling for Oxygen

Lower Duwamish Watershed

Marine Benthic Invertebrate Communities Near King County Wastewater Outfalls

Water and Land Resources Division

problems.

Eutrophication Potential
2006 Findings
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Fecal Bacteria

About this indicator: The presence of fecal bacteria in water bodies indicates contamination with the fecal material of humans, birds or other warm-blooded animals. Although these bacteria are usually not harmful, they often occur with other disease-causing pathogens, and their presence at high levels indicates an increased possibility that people might get sick if they come into contact with the water.

This standard addresses water quality requirements for protecting swimming, SCUBA diving and other recreational uses. For marine surface waters, the current fecal coliform standard is a geometric mean of 14 colony forming units /100ml.

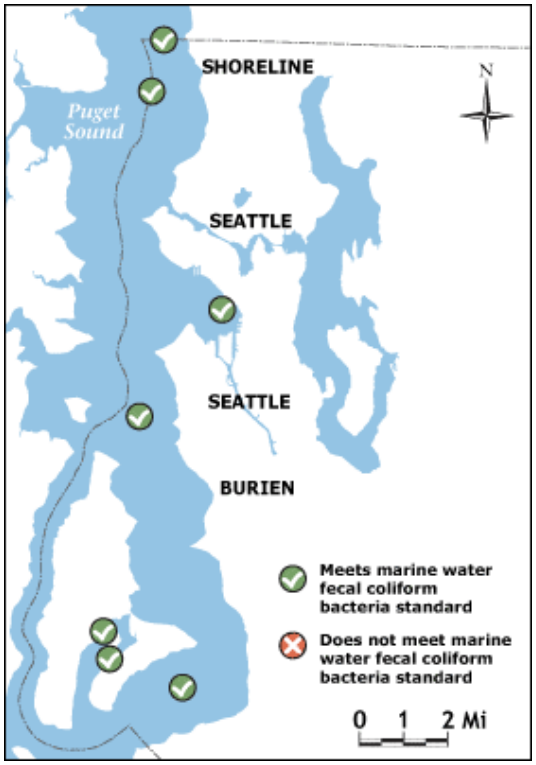
King County conducts monthly water quality monitoring at 13 offshore locations in Puget Sound. Offshore monitoring sites are divided into two categories: ambient sites are chosen to reflect general, or ambient, environmental conditions, while outfall sites are located at King County wastewater treatment plant outfalls and county-operated combined sewer overflow outfalls.

Status: Fecal bacteria are not a concern in parts of the Puget Sound that surround King County. All ambient and outfall sites met the fecal coliform bacteria geometric mean standard in 2006.

Influencing factors: Non-point source pollution is the major cause of marine water contamination. Fecal coliform can enter Puget Sound from domestic animals, wildlife, storm water runoff, wastewater discharges and failing septic systems.

Existing DNRP response: DNRP will continue to manage its wastewater treatment plants and conveyance system effectively. The county is working with the Puget Sound Partnership effort toward protecting and restoring the health of marine waters.

Priority new actions: Monitoring stations have been added in 2007 in Salmon Bay and Fauntleroy Cove.



Fecal bacteria at ambient monitoring sites
2006 Findings
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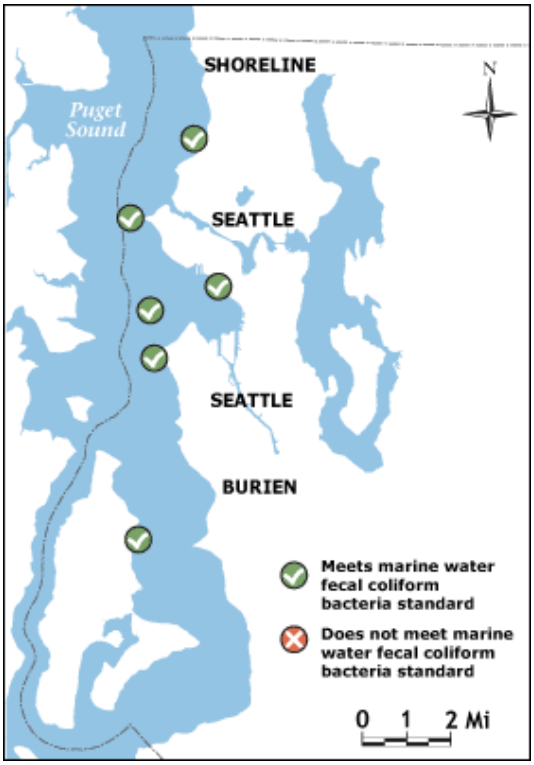

Fecal bacteria at wastewater outfall sites
2006 findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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Updated: September 28, 2007

SHORELINES

2006 Rating: ↓

Shoreline armoring

About this indicator: Shoreline armoring can take the form of a bulkhead, sea wall, riprap, or any other built impediment to naturally advancing tidewaters. The amount of shoreline that has been armored can be used as a general indicator of the condition of marine shorelines.

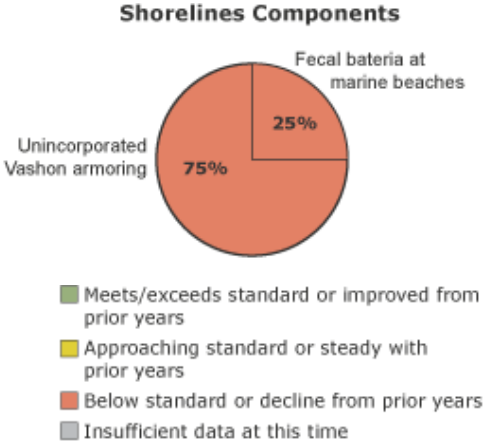
When armoring is present, the health of habitats decline in the nearshore area (the water, shoreline and adjacent upland areas). The nearshore area is an important feeding, nesting and resting ground for many fish and wildlife species, including young salmon as they migrate from the stream of their birth to marine rearing areas.

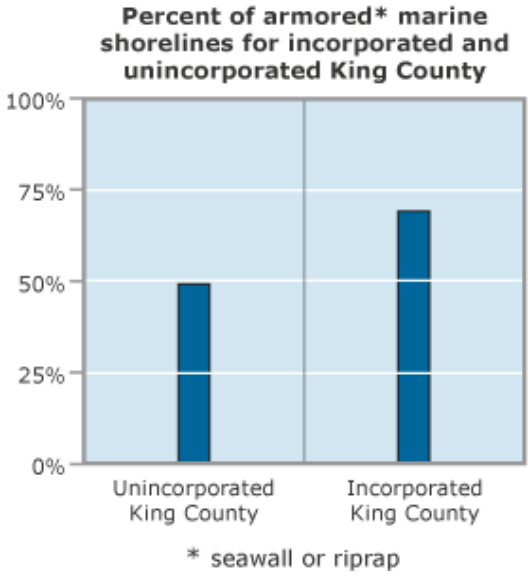
Status: Conclusions from a baseline survey for shoreline armoring in 2005 show that many beach-feeding sediment sources have been locked up behind armoring. Much of King County's mainland shoreline has been armored — in stark contrast to the relatively natural shorelines along Vashon-Maury Islands.

The Central Puget Sound Basin is one of the most heavily urbanized areas within Puget Sound, and King County's armored marine shoreline is indicative of this.

Influencing factors: Property owners build bulkheads to protect their homes and businesses from erosion.

Existing DNRP response: King County is working to decrease the rate of new and currently existing shoreline armoring in unincorporated areas. Recognizing that not all armoring has the same impacts, these reductions will be focused where sediment movement is restricted and most important. Removing or preventing armoring in deeper, inter-tidal waters is also a priority.





Many Vashon Island waterfront property owners who are applying for flexibility to critical areas regulations through the Rural Stewardship Planning process are being provided with alternatives to bulkhead construction.

Priority new actions: With a baseline in place, follow-up surveys of new armoring every five years will provide useful information. This will allow for a more realistic review of changes that occur

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Puget Sound Shoreline Stewardship Guidebook

Shoreline Practices for a Healthy Lake, River or Stream

Related Information

Vashon Island Environmental Information

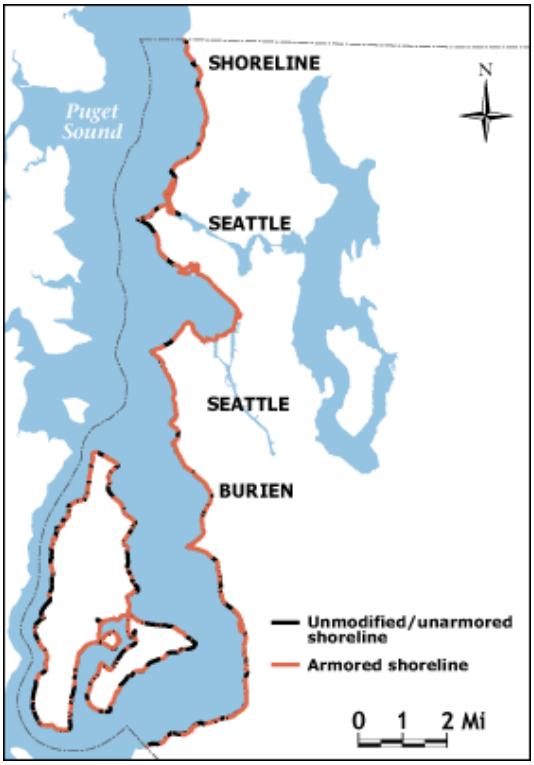
Shoreline Ecology

Shoreline Parcel Characterization

Interactive Shorelines Map

Shoreline Master Plan Updated

naturally and the results of those initiated by King County. Additionally, creating better guidance on the appropriate location and the type of new shoreline armoring is expected in the King County's Shoreline Master Program update.



Shoreline armoring (seawalls/bulkheads/riprap)
2005 Findings
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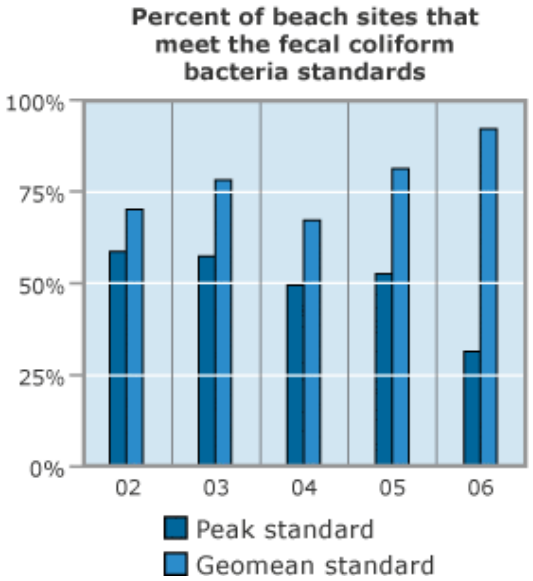
Fecal bacteria at marine beaches



About this indicator: Fecal coliforms are one of many groups of bacteria that indicate the presence of fecal contamination at swimming beaches. The State of Washington's water regulatory standards indicate that organism counts should not exceed a geometric mean value of 14 colony-forming units per 100 ml, and not more than 10 percent of the samples used to calculate the geometric mean should exceed 43 colony-forming units per 100 ml. These standards are known as the geo-mean standard and the peak standard, respectively.

For this indicator, comparison to both the geo-mean and peak standard are made for each beach site monitored (13 sites in 2006) using fecal coliform counts from samples collected on a monthly basis during the year. The geo-mean value reflects the typical fecal coliform count at a given site, while the peak value is used to determine whether pulses of high fecal coliform counts may be present at a site.

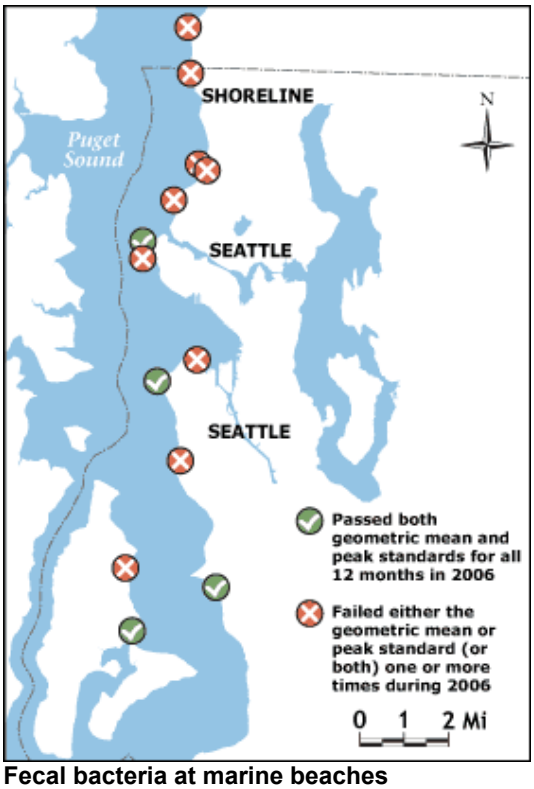
Status: During 2006, four of the 13 sites tested (30 percent) met both the geo-mean and peak standards for all 12 sampling events. Eight of the 13 sites (62 percent) met the geo-mean standard for all 12 sampling events, but did not meet the peak standard one or more times. One of the 13 sites (8 percent) did not meet either the geo-mean or peak standards one or more times. Sites with any type of standard failure are shown on the map by the red circled X.

Influencing factors: Fecal coliform concentrations measured at marine beach sites are highly influenced by proximity to fresh water inputs, especially during rainfall events. During 2006, the

majority of peak standard exceedances at all stations occurred following significant rainfall events during either or both January and December. The one station that failed both the geomean and peak standards one or more times is located offshore of Gorsuch Creek on Vashon Island. This station failed the peak standard only once, in April 2006. It failed the geomean standard three of the 12 months monitored and exceeded the standard only slightly with geomean values of 15, 15, and 16 colony-forming units per 100 ml.

Existing DNRP response: Past and on-going efforts by King County have reduced fecal contamination from most outfalls to the point that contributions from non point sources in the area are more significant than the outfalls themselves. DNRP has little control on improving current levels of fecal coliforms near most outfall sites. An exception to this is the Vashon outfall where recent improved maintenance and operations have reduced bacteria entering the environment and an upgrade to the outfall itself (moving it further out into deeper water) should further reduce fecal contamination on nearby beaches.

Priority new actions: DNRP will pursue efforts to determine sources of non-point source contributions of fecal coliforms. These efforts will include evaluating emerging technologies in microbial source tracking, and the continued application of fecal coliform survey projects, such as the one performed at Alki Point. King County has added an additional 13 new beach monitoring stations for 2007.



Fecal bacteria at marine beaches
2006 Findings
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Technical Notes

For definitions and more detail.

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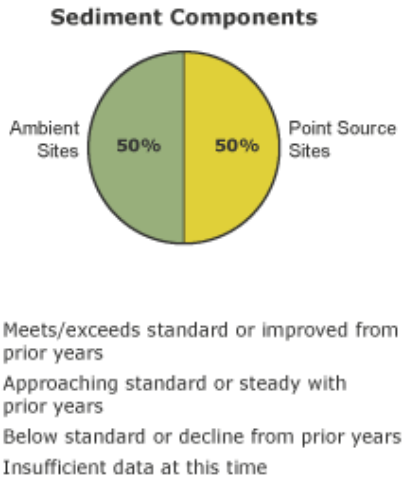
Updated: September 28, 2007

SEDIMENTS

2006 Rating: ⇔

Sediments in Puget Sound

Washington state's Sediment Management Standards seeks to reduce and ultimately eliminate adverse effects on biological resources and any significant human health risk from surface sediments in marine, low salinity or estuarine and freshwater environments. The Sediment Quality Standard, or "no adverse effects level," is the most protective chemical standard for marine sediments. The Cleanup Screening Level, or the "minor adverse effects level," helps identify areas of potential concern that may be designated cleanup sites.



The Sediment Quality Standard has been selected as the indicator because it is the more sensitive of the two criteria for environmental protection. Data from 2001 are used because they represent the most recent comprehensive survey of sediment quality in King County. In 2001, sediment sites were divided into two categories. Ambient sites were chosen to reflect general, or ambient, environmental conditions. Point source stations are located near King County wastewater treatment plant outfalls and combined sewer overflow outfalls.

Data from 2001 is still relevant for analysis because sediments (particularly those that are polluted) move slowly and don't change much over five years unless clean up efforts have been taken.

Status: Based on 2001 sampling data, two ambient sites do not meet sediment quality standards, but do not exceed the cleanup screening levels. Both sites are located within the Duwamish waterway, and there are no specific plans to address them at this time. As such, the ambient target is considered a "non-degradation" target such that conditions should not get worse. Of the 15 point source-related sites that exceed the Sediment Quality Standard, eight do not require clean up or monitoring. Six of the remaining seven point source sites are associated with combined sewer overflow outfalls, and one is associated with an emergency overflow.

Influencing factors: Many pollutants found in the environment are not detected in water, but are attached to sediment particles. Once in the sediments, these pollutants can directly harm marine organisms or be reintroduced to the food chain through the organisms found in marine sediments.

Existing DNRP response: Strategies to achieve the outcome goal focus on collaborating with other organizations, including the City of Seattle, Port of Seattle, and Boeing, with which King County has joined to form a public-private partnership called the Lower Duwamish Waterway Group. This group will be funding cleanups at "early action sites" as part of the Lower Duwamish Waterway federal Superfund process. A partial cleanup was completed in 2004 at the first of these sites, the Duwamish/Diagonal Way site. A follow-up cleanup was completed in 2005.

Priority new actions: The cleanup of the Lower Duwamish Waterway includes a multi-agency, source-control effort to reduce the potential for future recontamination. Additional sediment site cleanups may be completed later under Superfund, or as part of other activities in the Duwamish

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Understand Industrial Waste Discharge Limits

Related Information

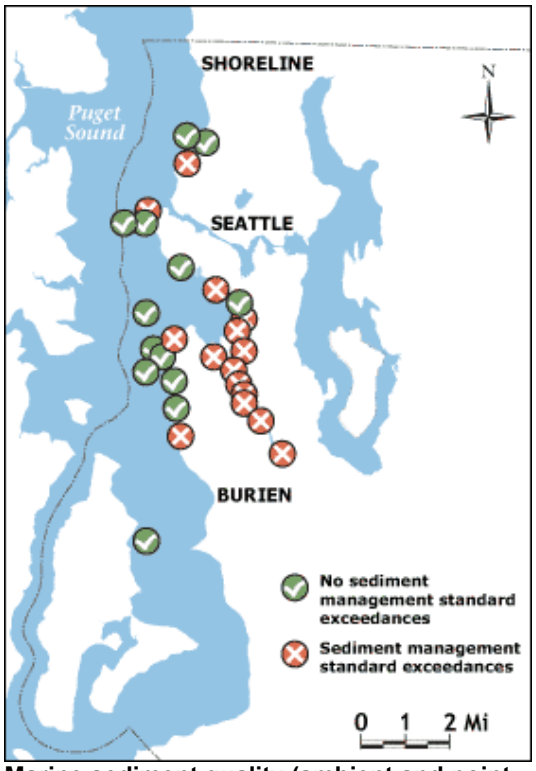
Puget Sound Marine Topics

Puget Sound Watershed

Vashon Island Environmental Information

waterways. It is expected that three to five additional sites could be addressed by 2010.

King County is in the processing of redesigning the marine ambient and outfall sampling program, so no new samples have been collected.



Marine sediment quality (ambient and point source)
2001 findings

Technical Notes

For definitions and more detail.

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INDICATORS - 2006 ARCHIVE

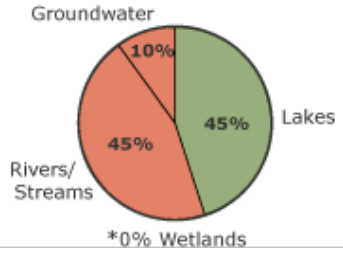
FRESHWATER HABITAT

2006 Rating: ↓

Indicator

King County's Freshwater Habitat Index is derived from three main groupings of results describing the conditions of rivers and streams, groundwater and lakes. Wetland conditions do not factor into the index at this time because of inadequate data. Our weighting system applies 45 percent each to rivers and streams and to lakes, and 10 percent to groundwater condition results toward the overall freshwater habitat quality. The weighting of groundwater quality would be larger if data existed for groundwater nitrates and well water levels for other areas besides Vashon-Maury Islands.

Freshwater Habitat Components*



*0% Wetlands

- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time

Status

Overall below standard, though with some areas (lakes) of lesser concern

Influencing factors

The impacts of development, landowner practices in areas close to the shoreline and pollutants are the dominant drivers determining the health of freshwater bodies in King County. Less forest cover and increases in impervious surfaces result in higher stream temperatures and more urban runoff. Phosphorus from blended stormwater and wastewater that bypasses the treatment process during significant storm events, failing septic systems, pet wastes and water bird droppings reduce dissolved oxygen levels and increase water temperatures.

Existing DNRP response

King County is working to replace old, underground, open wastewater pipes with closed systems to reduce wastewater overflows during heavy rains. Additionally, new combined sewer storage tunnels have been built to hold millions of gallons of combined wastewater and stormwater during heavy rain events. Once the storm has passed, the combined wastewater and stormwater can be sent to a wastewater treatment facility for processing. Other programs, such as King County's agriculture and forestry programs work to reduce the impacts of farming and timber harvesting on our creeks and streams.

Priority new actions

King County has established a new countywide Flood Control Zone District to better manage levees and revetments along major rivers, and cooperative watershed management efforts will be part of this initiative. This is the second year that revised critical area and clearing and grading regulations are in place. The regulations aim to offer greater protection to all critical areas including, creeks and streams. Additionally, King County is updating its Shoreline Master Program. Included in this state-

WHAT CAN YOU DO?

At Home

- Shoreline Practices for a Healthy Lake, River or Stream
- Embrace Natural Yard Care
- Home & garden hints for healthy streams & salmon

At Work

- Reduce your runoff, get a fee discount
- Learn Best Practices to reduce Stormwater Pollution
- Erosion Control for Construction Sites
- Apply Integrated Pest Management in your landscaping

Related Information

- King County Watersheds
- Salmon and Trout Topics
- Shoreline Master Program
- Streams Water Quality Monitoring Data
- Groundwater data
- Normative Flow Studies
- Interactive Hydrography Map
- EPA: Lower Duwamish Watershed

mandated update of its shoreline management is an in-depth analysis of the condition of all shorelines within the county, including most creeks, streams and lakes.

What you can do

Properly dispose of unused pharmaceuticals, harmful chemicals and paints, instead of pouring them down the drain or allowing them to run off on the ground. Minimize the use of fertilizers and pesticides by practicing natural yard care. Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash. Properly dispose of or manage pet and livestock wastes.

More information about King County's Lakes, Rivers/Streams, and Groundwater is available by continuing to the pages for these measures:

- Lakes
- Rivers/Streams
- Groundwater

Back to top

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- Mistakes to fix

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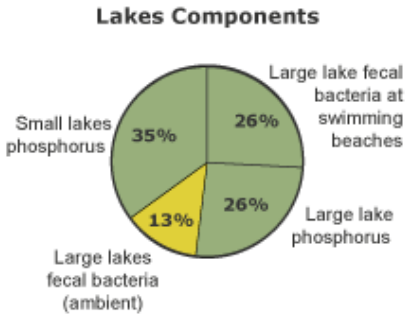
Updated: September 28, 2007

LAKES

2006 Rating:

Small lakes - water quality in small lakes

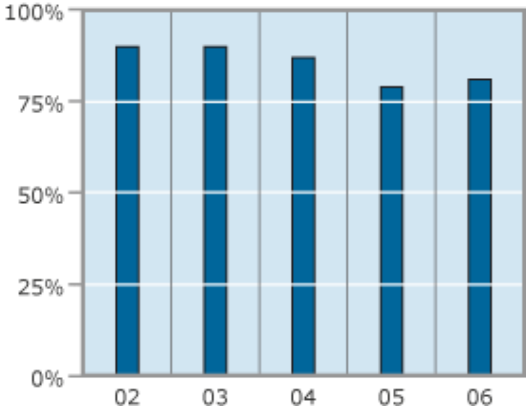
About this indicator: DNRP's goal is to maintain all beneficial uses of county lakes. In this region, high concentrations of the nutrient phosphorus are often correlated with increased algal growth. Thus, if the amount of phosphorus entering lakes is controlled or reduced, algal blooms are likely to decrease. Algal blooms are a nuisance because they can cause scum to form on the lake's surface and occasionally give a foul odor and taste to the water. When a bloom dies off it can also deplete the oxygen levels available to other aquatic life. In rare circumstances, algal blooms can become toxic.



Phosphorus concentrations in lake water as an indicator assess the potential for nuisance or toxic algal blooms that impact lakes, facilitating allocation of limited county resources toward restoring lakes with indications of serious degradation. This indicator uses summer phosphorus concentrations converted to Trophic State Indicators (TSI-TP) to assess conditions. Trophic State Indicators relate phosphorus to the amount of algae that the lake can support. Values below 50 have low or moderate potential for nuisance algae blooms; values above 50 have a higher potential.

- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time

Percent of regional county lakes with low or moderate Trophic State Index - Total Phosphorus values (lower values equal lower risk of algal blooms)



Status: King County monitored 42 lakes in 2006, 16 of which were funded by city contracts. Slightly more than 80 percent of the lakes have good water quality with low potential for nuisance algal blooms.

Influencing factors: Lake water quality varies annually and is affected by many factors depending on the conditions in each lake. Phosphorus can be managed through drainage system design, increasing sewer service, and encouraging homeowners through education and incentives to use best management practices. Although large amounts of algae may relate to changes in conditions, this increased presence may not always reduce beneficial uses. However, a trend in a particular lake toward increased TSI-TP over time is probably due to changes in the watershed and cannot be discounted.

WHAT CAN YOU DO?

At Home

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At Work

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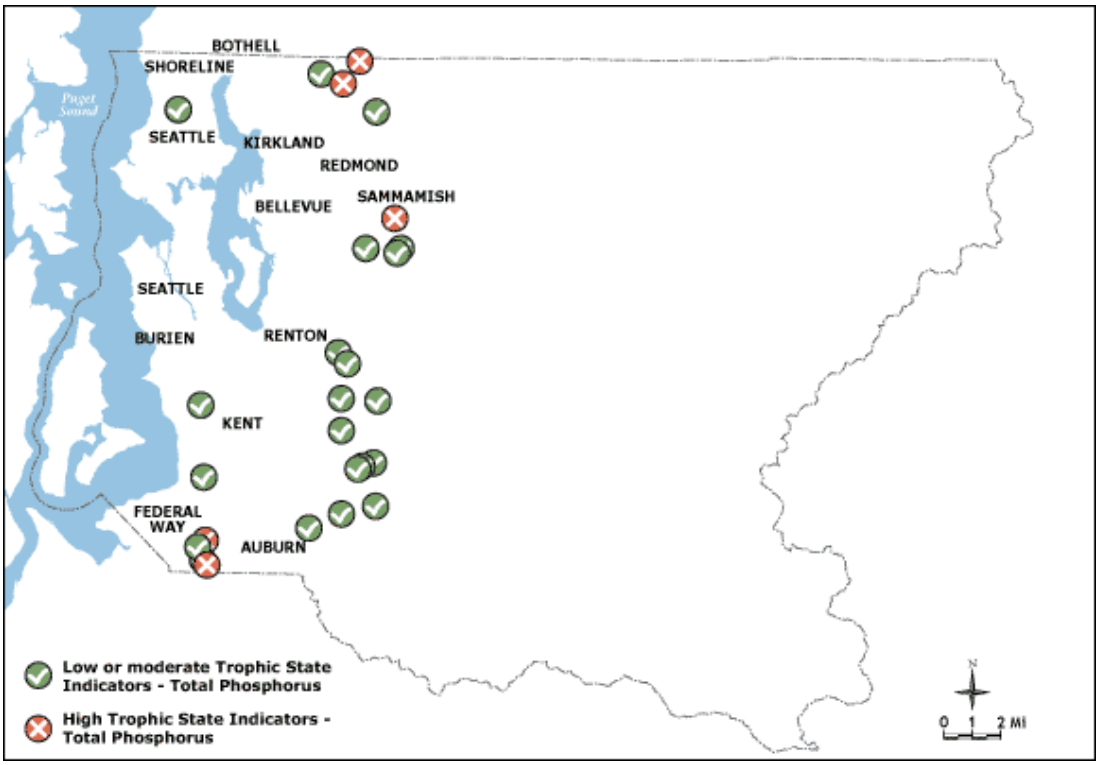
Related Information

- Lake Topics
- King County Watersheds
- Salmon and Trout Topics
- Shoreline Master Program
- Major Lake Data
- Interactive Hydrography Map
- Small Lake Monitoring Data
- Shoreline Master Plan Updated
- Lake Washington's Ecosystem

Existing DNRP response: We continue to monitor the managed lakes and implement elements of the Lake Management Plans under county jurisdiction, with community support, as funds become available.

Priority new actions: Lake management plans will be considered if any other county lakes begin to show serious deterioration in terms of beneficial uses. Monitoring data will be available online beginning in mid-2007.

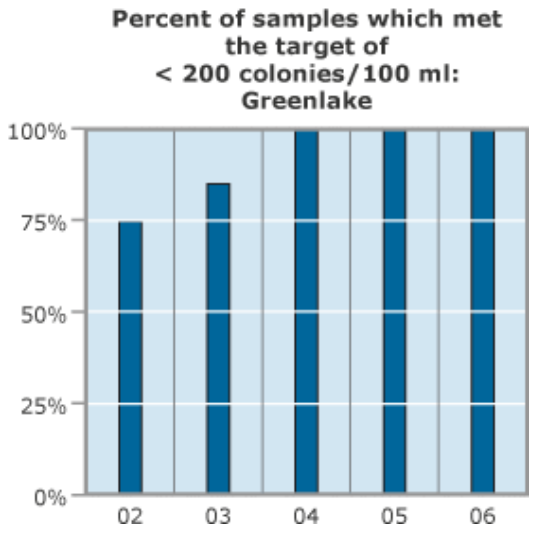


Water quality in small lakes
2006 Findings
Click to download the PDF version.

Large lakes - fecal bacteria at swimming beaches in large lakes

About this indicator: When fecal coliform bacteria are found in lake waters it indicates that the water has been contaminated with fecal material from humans, birds or other animals. Although fecal coliform bacteria themselves are usually not harmful, they often occur with other disease-causing bacteria so their presence indicates the potential for pathogens to be present that are a risk to human health.

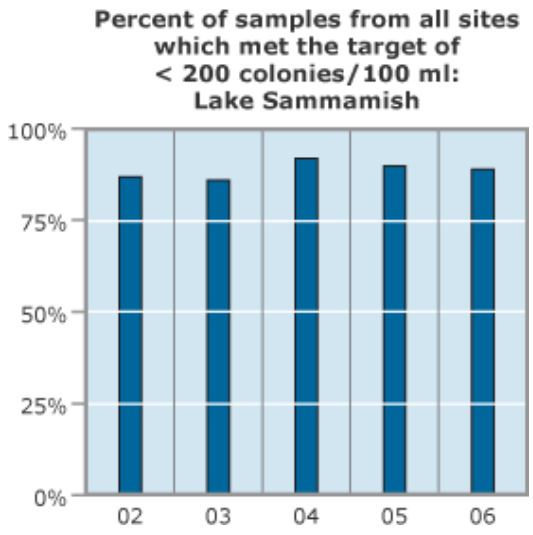
Status: Bacterial counts at all swimming beaches monitored in lakes Washington, Sammamish and Green Lake in 2006 were within acceptable ranges and did not warrant swimming beach closures. Bacteria levels were low in Green Lake for the second year in a row, while Lake Washington and Lake Sammamish remained fairly consistent, with slight variability from year to year. The 2007 target and long-term outcome for swimming beaches on large lakes is that none of the testing sites violate the fecal coliform bacteria target of 200 colonies per 100ml of water.

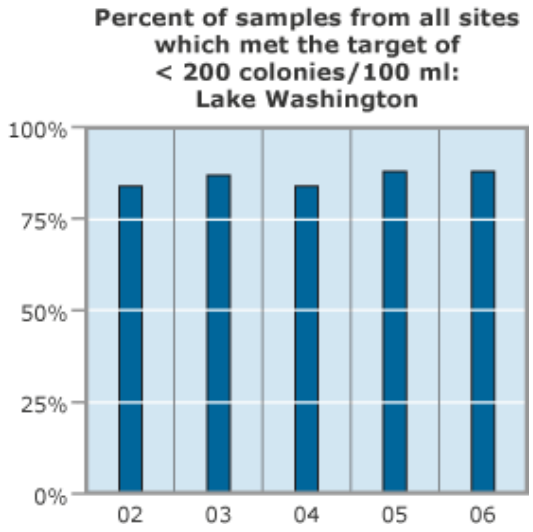


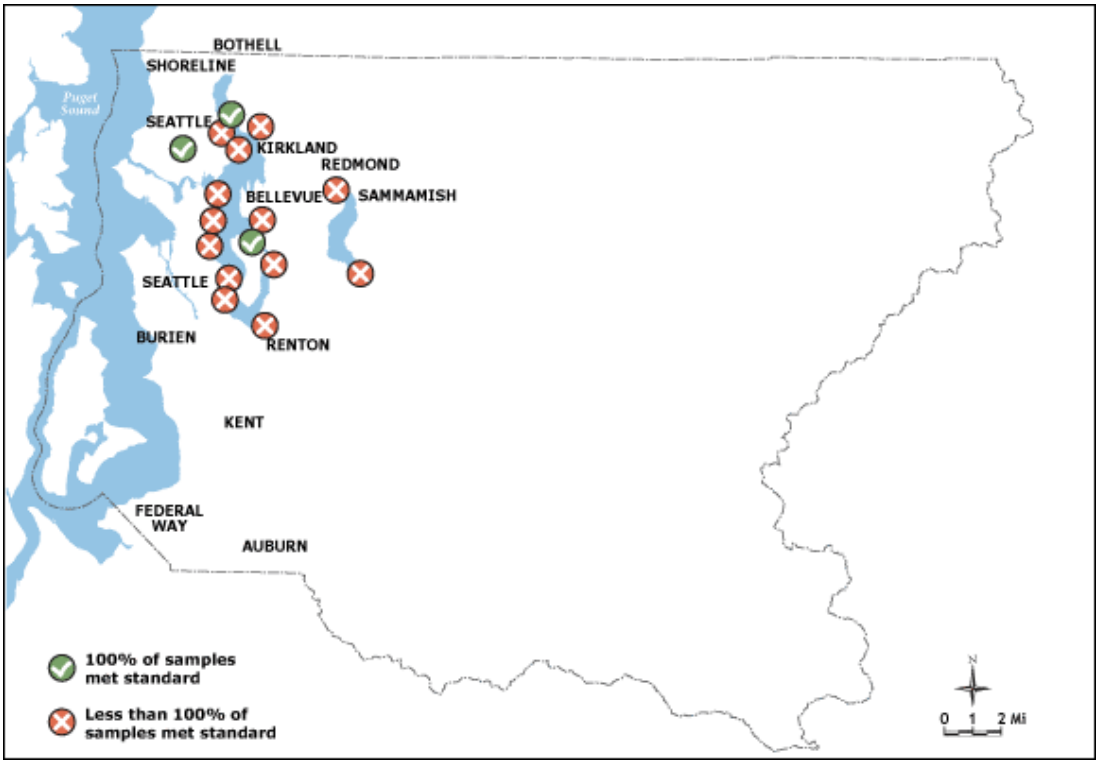
Influencing factors: Fecal coliform bacteria can enter lakes from household pets or farm animals, wildlife, stormwater runoff, untreated wastewater effluent, sewage overflows or failing septic systems. The most impacted beaches are adjacent to streams draining urbanized watersheds.

Existing DNRP response: King County routinely monitors swimming beaches during the summer months to determine levels of bacterial pollution and works with Public Health - Seattle & King County to estimate relative human health risks. If bacterial counts at swimming beach testing sites are greater than 200 colonies per 100 ml of water, the beach will be temporarily closed. By matching the bacteria genetically to its source, King County scientists have identified waterfowl as the primary source of the fecal coliform contamination at many of the beaches during these times.

Priority new actions: Changes to park maintenance procedures and control of non-migratory, non-native waterfowl should reduce bacteria counts and improve the water quality at large lake swimming beaches. Efforts to identify and correct bacterial source in the urban streams that discharge adjacent to swimming beaches has begun. A Total Maximum Daily Load (TMDL) for bacteria in Thornton Creek has been started.

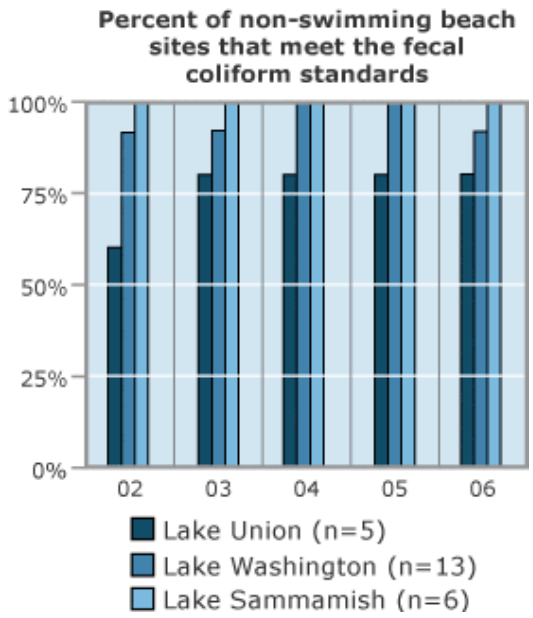






Fecal bacteria at swimming beaches in large lakes
2006 Findings
Click to download the PDF version.

Large lakes - fecal bacteria at non-swimming beaches (ambient) in large lakes



About this indicator: The presence of fecal bacteria in waterbodies indicates contamination with the fecal material of humans, birds or other animals. Fecal coliform bacteria can come from household or farm animals, wildlife, stormwater runoff, untreated wastewater effluent and failing septic systems.

Although these bacteria are usually not harmful, they often occur with other disease-causing pathogens, so their presence at high levels indicates an increased possibility that people might get sick if they come into contact with the water.

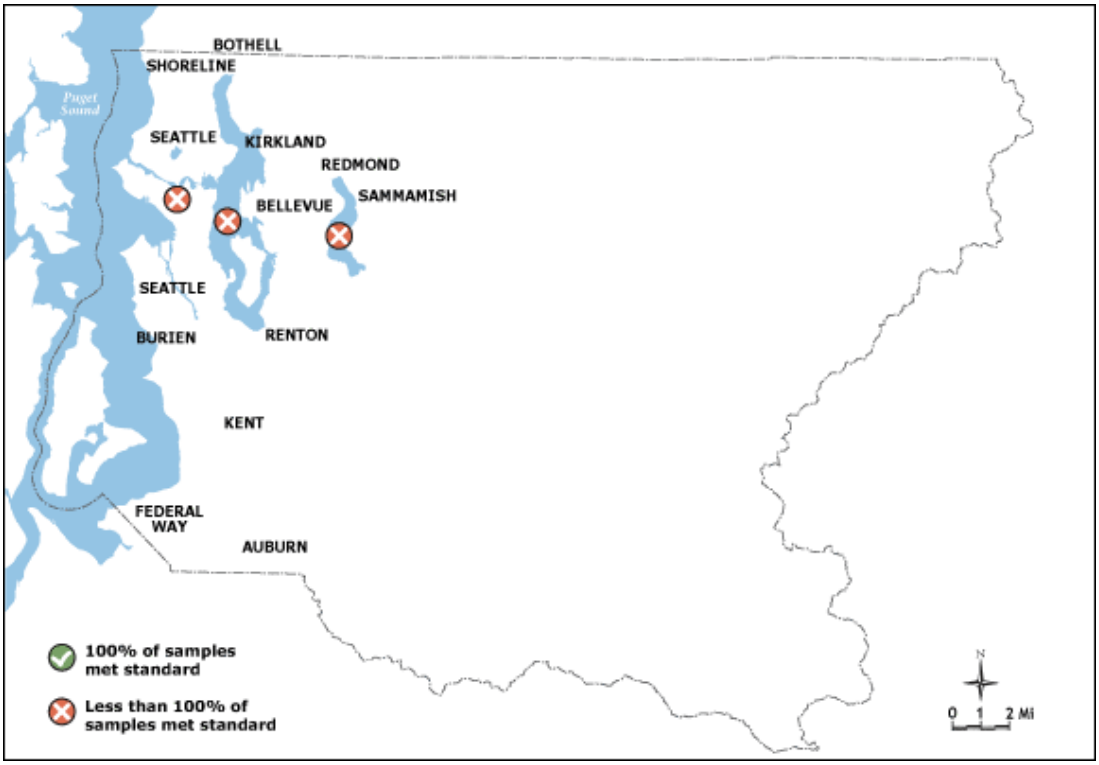
The lake standard for fecal coliform bacteria addresses human safety due to direct contact with the water from activities such as swimming and wading. The standard is a geometric mean value of less than 50 colonies/100 ml and not more than 10 percent of all samples obtained for calculating the geometric mean value shall exceed 100-colonies/ 100 ml. Sites used for this indicator are located in both mid-lake (open water) and nearshore locations in King County's three largest lakes — Washington, Sammamish and Union. This environmental indicator is based on data collected at the routine monitoring sites and does not include sampling done in conjunction with emergency overflow events.

Status: Even though this measure uses a standard that is exceptionally difficult to attain, 100 percent of the Lake Sammamish stations, 92 percent of Lake Washington stations, and 80 percent of Lake Union stations have achieved the lake standard for fecal coliform bacteria. Lake Washington showed a decrease from 2005 of 8 percent, due to higher bacteria at one station (4903).

Influencing factors: Roughly half of the samples that had higher fecal coliform levels were the result of unusual storm conditions with the highest bacteria concentrations collected directly after record rainfall swept through the region in November 2006. Lower percentages in Lake Union are attributed to the influence of combined sewer overflow and stormwater outfalls into the lake.

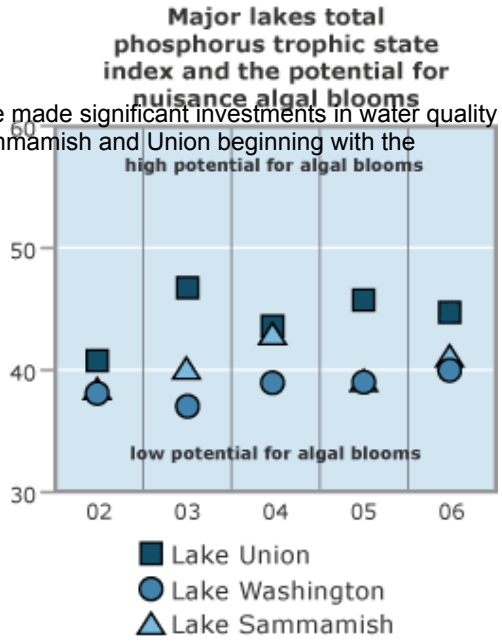
Existing DNRP response: DNRP will continue its extensive monitoring efforts to detect potential and existing problems with the stormwater and wastewater treatment system. In addition, King County's Combined Sewer Overflow (CSO) program is employing various ways to control CSO's including controlling pollution at its sources, optimizing flow management, monitoring and modeling flows in the system and constructing CSO control facilities.

Priority new actions: King County expects to build about 20 Combined Sewage Overflow control projects during the next 30 years.



Fecal bacteria at non-swimming beaches (ambient) in large lakes
2006 findings
Click to download the PDF version.

Large lakes - water quality (phosphorus) in large lakes



About this measure: The people of King County have made significant investments in water quality improvement and protection to lakes Washington, Sammamish and Union beginning with the diversion of wastewater effluent out of Lake Washington and Lake Sammamish in 1968.

Improvements have continued with efforts to reduce the amount of stormwater discharges through combined sewer overflows, expected improvements in King County's wastewater treatment system from construction of the new Brightwater treatment facility and expansion of effluent reuse programs. These gains in water quality are constantly threatened by increasing amounts of phosphorus entering the watersheds as a result of increased development.

Status: Lake water quality results vary annually, depending on the weather and other biological interactions that combine to create unique conditions in each lake. For example, the 1994-2006 results for Lakes Sammamish and Washington show values fluctuated between the low to moderate threshold from year to year, indicating the water quality varies from good to moderate with low potential for nuisance algal blooms. Lake Union typically has values within the moderate water quality range.

Lake Sammamish is the only one of the three lakes with a management plan and designated water quality goals. The plan calls for an annual volume weighted total phosphorus concentration (VWTP) of 22 µg/L or less. The south lake station has met this goal with a VWTP of 21 µg/L, while the north station had a VWTP of 22µg/L.

Influencing factors: In this region, phosphorus is most often the nutrient that promotes algal growth.

The more phosphorus that can be stopped from entering lakes, the less chance that potentially toxic, algal bloom will grow. Phosphorus can be managed through well-designed drainage systems, maintenance of sewer infrastructure, changing homeowner and business behaviors using education and incentives and replacing watershed septic systems with sewers.

Existing DNRP response: King County will continue to monitor these lakes as part of its ongoing, Major Lakes Ambient Monitoring Program. This program is designed to track how lakes respond over time to various activities and inputs from the watersheds through influent streams, lake nutrient cycles, ecological interactions, and seasonal or year-to-year variability in weather. The goal of 100 percent of the three major lakes being within the range of moderate to low risk of potential algal blooms has been met. If the lakes begin to show serious deterioration in terms of their beneficial uses, actions will be taken to further investigate causes and plans will be made.

Priority new actions: Continual changes to data analysis and Web site reporting will provide current and accessible information for the management of these resources.

Technical Notes

For definitions and more detail.

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Updated: September 28, 2007

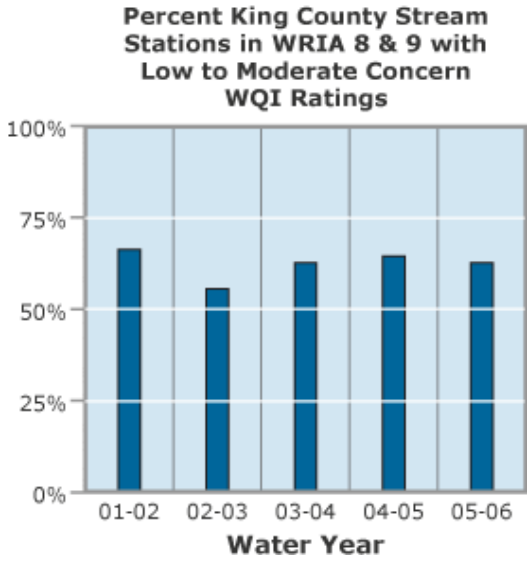
RIVERS/STREAMS

2006 Rating: ↓

Stream water quality

About this indicator: King County's Water Quality Index integrates key factors into a single number that can be compared over time and across locations. This index is based on the Oregon Water Quality Index and work done by the Washington Department of Ecology. From 2001 through 2005, 56 sites in the Lake Washington and Green-Duwamish drainage basins were sampled monthly for temperature, pH, fecal coliform bacteria and dissolved oxygen, relative to state standards.

Status: Overall stream water quality in King County is fairly good. Of the total sampled stream sites, 63 percent were considered moderate to high water quality, and 38 percent were rated to be of high concern. All sites rated of high concern were impacted in part by excessive nitrogen and/or phosphorus. In addition, low dissolved oxygen and high bacteria levels contributed to high concern ratings at 6 and 4 sites, respectively. None of the "high concern" sites were the result of high temperatures. While cumulative rainfall in 2006 was average compared to historical values, July and August were relatively dry months.



Influencing factors: Stormwater, waterfowl and pet wastes are the most likely sources of bacteria in urban streams. Poor livestock manure management and failing septic systems can be a potential source of bacteria in agricultural and suburban areas. In wetlands, wildlife excrement and stagnant water conditions can lead to elevated bacteria counts. High phosphorus concentrations are found in fecal material and elevated concentrations are often linked to similar sources as bacteria. In addition, elevated phosphorus concentrations are linked to areas undergoing development.

Low dissolved oxygen concentrations can be associated with low flows, high temperatures (colder water holds more oxygen), and high levels of organic matter (bacteria use up oxygen in the process of decomposing).

Existing DNRP response: King County is responsible for preserving water quality and preventing and repairing damage to its waterways and water bodies. Attention is given to high concern sites to

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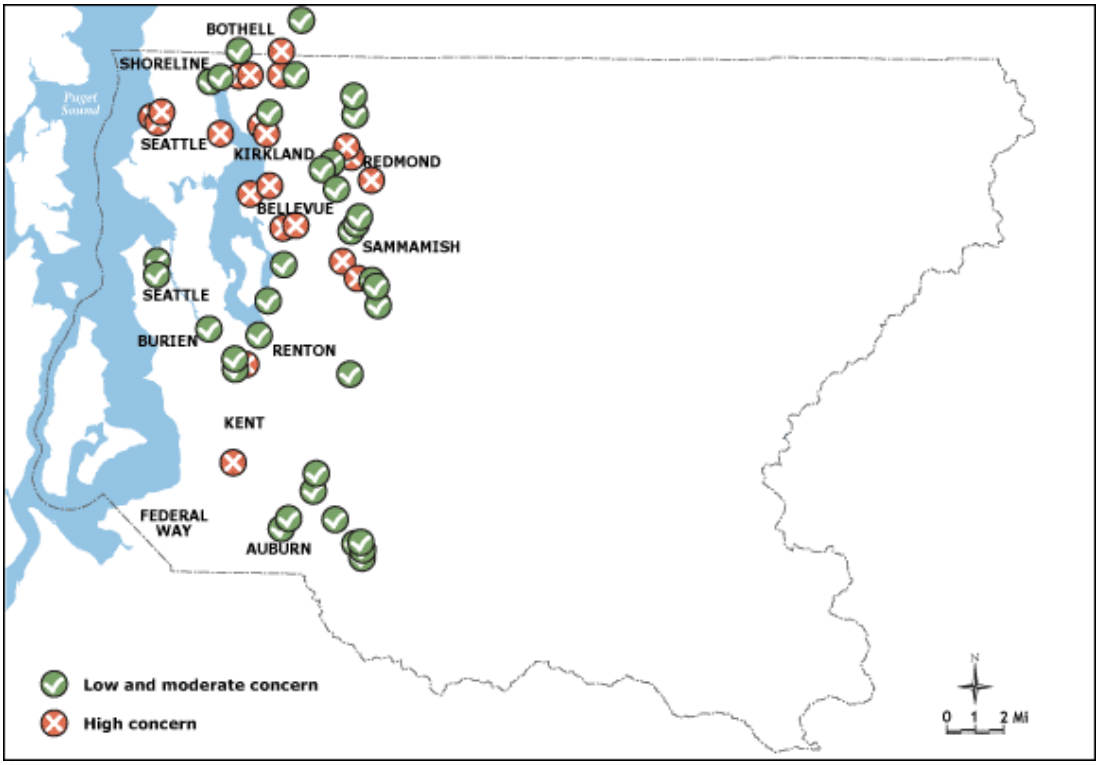
- Interactive Hydrography Map

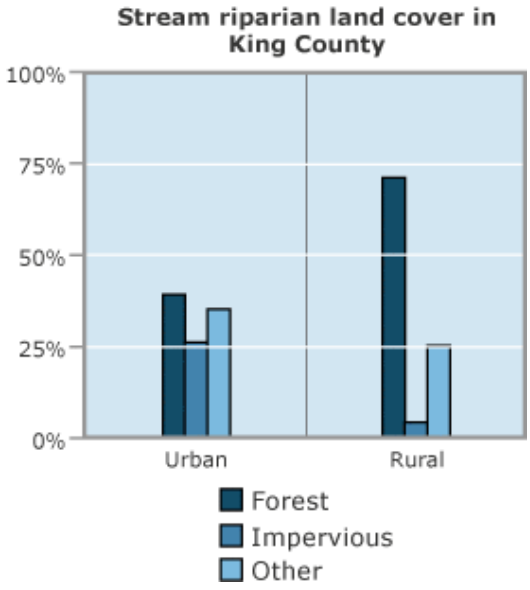
improve water quality. This can involve constructing or engineering a solution, identifying where or how pollutants are entering the stream, and/or educating adjacent property owners about the impacts of pesticides and fertilizers on streams.

Priority new actions: Results from King County's Water Quality Index highlight the need for a comprehensive and coordinated approach to resolving in-stream flow management, since lower flows inflate every water quality measurement of the index. King County will continue to advocate for water supply planning at a regional scale to gain a better understanding of the location, causes, effects and ways to mitigate impacts.



Stream water quality index
2006 Findings
Click to download the PDF version.

Stream riparian habitat



About this environmental indicator
Increased population and development have substantially altered the landscape in King County over the past two centuries. This indicator reflects landscape changes that protect forest and aquatic habitats along streamside, or riparian, corridors.

Forest data were derived from a 2001 Landsat image, and impervious area data were derived from 2000 multispectral images. The width of riparian areas along stream banks varied between a minimum 165-foot buffer on each side and expanded to include wetland and steep slope areas. Possible landslide areas that extend past this buffer were also included. This approach to defining "riparian areas" is intended to encompass functional features of adjacent lands that could have been missed if a simple buffer width were used.

Status: Stream riparian land cover was categorized by urban vs. rural areas. Countywide, stream riparian areas in rural areas (71percent) have higher forest coverage than urban areas (39 percent), as shown in Chart 1 and Figure 1. Impervious coverage along the riparian corridor in urban areas (26 percent) was almost seven times more than in rural areas (4 percent).

Shoreline Master Plan Updated

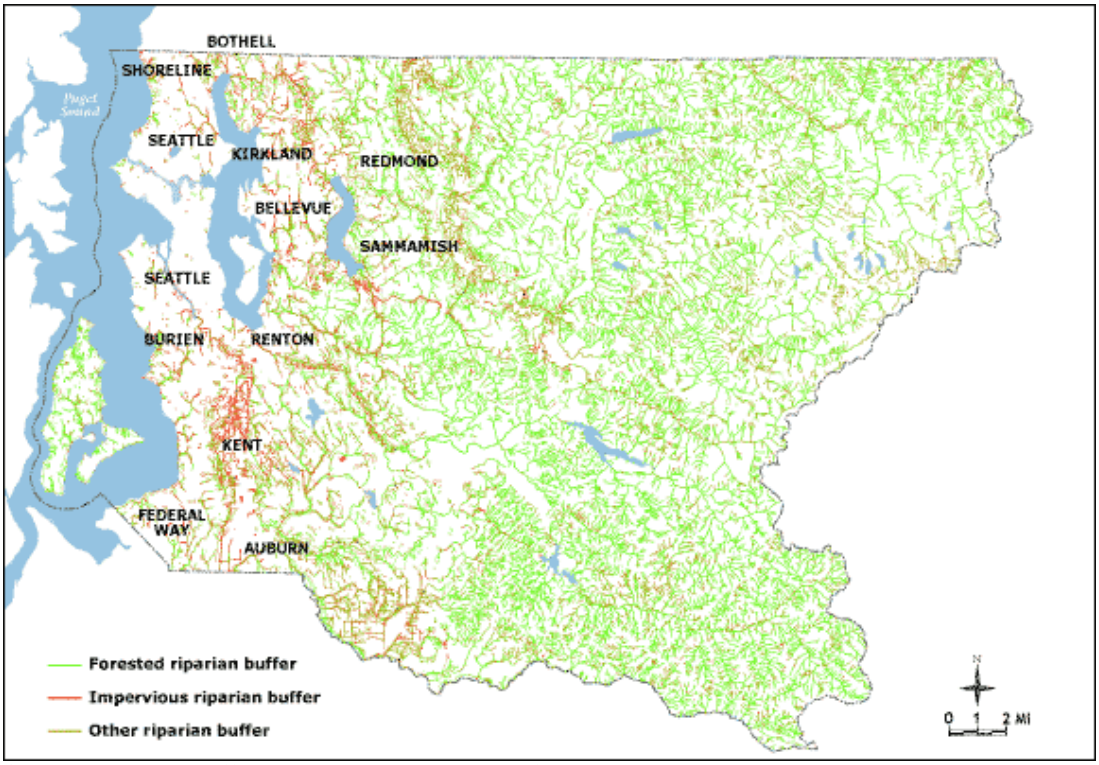
Lower Duwamish Watershed

Influencing factors: Forests naturally regulate stormwater runoff, protect water quality ,provide habitat for many species, and maintain healthy streams and rivers for salmon and other fish. Less forests result in less stormwater control, less habitat for forest species, and aquatic systems that are less-healthy for fish. Increases in impervious surfaces are generally associated with the highest rates of stormwater runoff, the highest degradation in water quality, and the most impacts on forest and aquatic species.

Existing DNRP response: Land-use regulations, which were updated as part of the Critical Areas Ordinance in 2004, attempt to maintain a minimum of 65 percent forest cover and limit impervious areas to less than 10 percent in rural, unincorporated King County. They also provide extra protection for aquatic riparian areas. King County DNRP intends to monitor forest cover and impervious area within riparian zones.

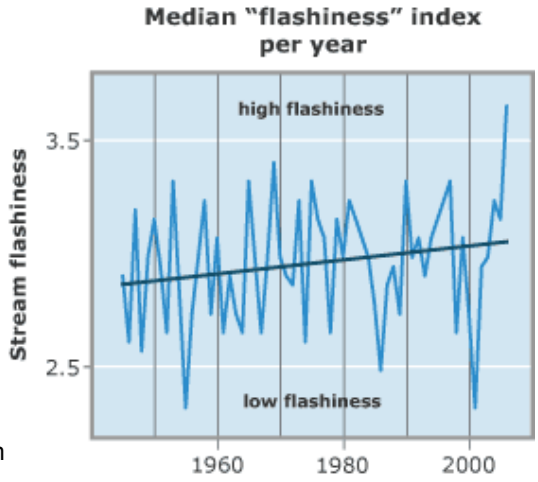
The county works with landowners to restore streamside parcels that have important benefits as aquatic resources. In addition, the King County Water and Land Resources Division's capital projects program builds small and large stream and wetland enhancement projects while protecting public safety. Habitat restoration projects include streamside and wetland planting and in-stream habitat improvements.

Priority new actions: King County is in the midst of updating its 30-year old Shoreline Master Program, which guides land-use activities along shorelines of marine areas and most lakes and streams in unincorporated King County. The first step in this effort is to review current shoreline conditions, including ecology, public access, land use and historic resources. The program update, which is expected to be completed in late 2008, will include changes that will have an effect on this indicator.



Stream riparian buffer characterizations (165 feet each side)
2001 findings
Click to download the PDF version.

Stream water quantity



About this indicator: This indicator uses a stream "flashiness" index The "flashiness" index is based on the reciprocal of the fraction of days during the year that the flow rises above the annual mean daily flow. Because peak stream flow rises and falls more quickly in urban areas than forested areas, urban streams tend to have a smaller fraction of days during the year when the flow is above the annual mean daily flow, and a higher "flashiness" index score. This increase in the "flashiness" index score represents the loss of water storage capability of soils and vegetation due to urbanization. To assess conditions throughout the county, the median stream "flashiness" is calculated each year across all streams where flow is measured. The median stream "flashiness" score represents the degree of water storage ability where half of the streams are flashier and half are less flashy.

Status: Flows from 17 stream sites in King County were measured and their "flashiness" calculated during the 2006 water year (October 2005 — September 2006). Flows for four of these streams were measured by the United States Geological Survey. The median of the "flashiness" index scores across all streams measured in King County has increased between 1945 and 2006 and was higher in 2006 than in 2005.

These data suggest that increased urbanization in King County has resulted in faster surface runoff and peak stream flow rise and fall than previously occurred for some of the streams

Influencing factors: Extensive development can substantially alter stream flow patterns and how they respond to rainfall. In urban areas, surface runoff occurs more quickly than in forested areas because less rainfall is absorbed by the vegetation and soil. Faster runoff in urban areas results in higher peak stream flows rising and falling more rapidly than under forested conditions. Increased peak flows and "flashiness" leads to the most obvious effects from a human perspective — flash flooding and channel erosion. From a biological perspective, streams with greater "flashiness" are disturbed more often. Organisms that survive in these conditions are those that have adapted to more frequent and severe disturbances.

Existing DNRP response: King County has a multitude of regulatory, educational, and on-the-ground programs to reduce the impacts of development on streams and reduce the amount of "flashiness." The County's Drainage Design Manual directs drainage requirements for all new development.

Priority new actions: In compliance with National Pollutant Discharge Elimination System permit requirements from the state (as part of the federal Clean Water Act), a closer linkage between the effectiveness of stormwater controls and water quality and flows is expected. This may translate into more monitoring at retention / detention ponds to make sure they are working as expected.

Instream flows
"Instream flows" calculates the quantity of water in streams needed to protect and preserve fish, wildlife and recreational activities. The term is most often used in formal legal documents, typically adopted state rules used to determine if water is available for new out-of-stream uses, to regulate those new uses, and to define the stream flows that need to be met in the stream. The Washington State Department of Ecology maintains a Web site with detailed descriptions, regulations, data, and links to further resources at http://www.ecy.wa.gov/programs/wr/instream-flows/isfhm.html. WRIA 7 is the only King County WRIA currently shown on the Web site (https://fortress.wa.gov/ecy/wrx/wrx/flows/irpp-wria.asp?id=07).

303(d) List
The state has assessed available water quality data to get a better picture of the overall status of water quality in Washington's waters. The results of the assessment are submitted to the Environmental Protection Agency (EPA) as an "integrated report" to satisfy federal Clean Water Act requirements of sections 303(d) and 305(b). The assessment includes the list of known polluted waters in the state, sometimes referred to as the 303(d) list. Background, resources, and information related to this list can be viewed on their Web site (http://www.ecy.wa.gov/programs/wq/links/wq_assessments.html). The state Web site also provides an interactive mapping and query tool that can be used to show water bodies listed under Section 303d of the Clean Water Act by the Washington Department of Ecology as violating clean water standards.

Technical Notes

For definitions and more detail.

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Updated: September 28, 2007

GROUNDWATER

2006 Rating:

Vashon water and nitrate levels

About this indicator: King County has been tracking groundwater quality and quantity on Vashon-Maury Island since 2001. Nitrate is used to track groundwater quality because it is a good indicator of changes caused by human activities, such as land-use development. Water levels are tracked frequently in both volunteer and dedicated monitoring wells. King County's goal is to ensure sustainable water quantity through appropriate zoning regulations and high water quality through effective land-use and on-site septic regulations.

The groundwater quality indicator uses a nitrate index, defined as the maximum concentration of the annual sampling results divided by the maximum contaminant level (MCL) of Nitrate (10 mg/L). This method yields one number. The closer this index gets to 1 (or over 1) the greater concern. The nitrate index has been less than 0.5 since 2003.

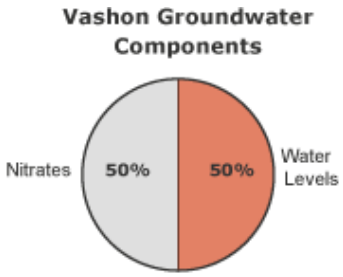
Status: Of the 19 well/spring sites monitored, all have tested below the drinking water standard (Maximum Contaminant Level, MCL of 10 mg/L) and all have less than 5 mg per liter of nitrate present. Less than half the sites tested have seen above average nitrate increases since testing began.

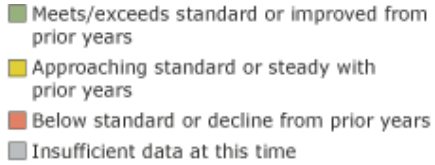
(Decreases) Changes in water levels are thought to have been caused by (less) changes in precipitation/recharge to island aquifers.

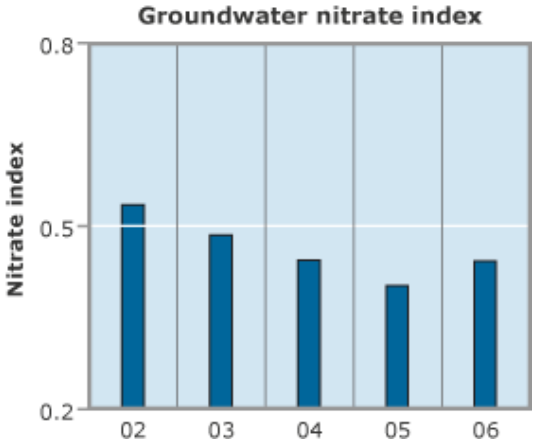
Influencing factors: Poor drainage systems, improperly maintained septic systems and improper fertilizer use can increase nitrate levels. Changes in land use and/or vegetation, increases in groundwater withdrawals and climatic changes can adversely affect the quantity of groundwater.

Existing DNRP response: King County plans to continue monitoring Vashon's wells and springs annually for nitrate concentrations and water levels measurements.

Priority new actions: Additional locations have been sought to take water level measurements







WHAT CAN YOU DO?

At Home

- Properly dispose of Household Hazardous Waste
- Check for and repair failed septic systems
- Install Rain Barrels at home

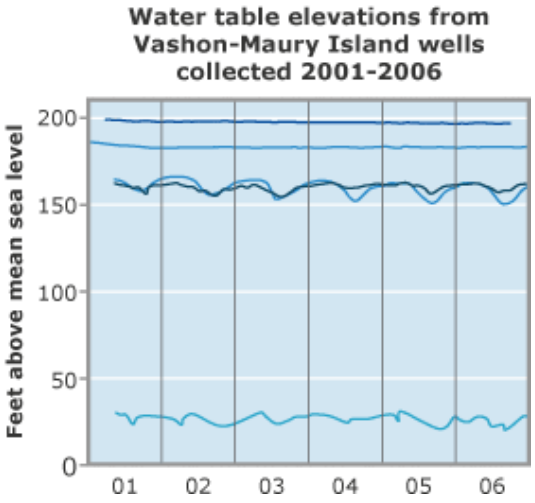
At Work

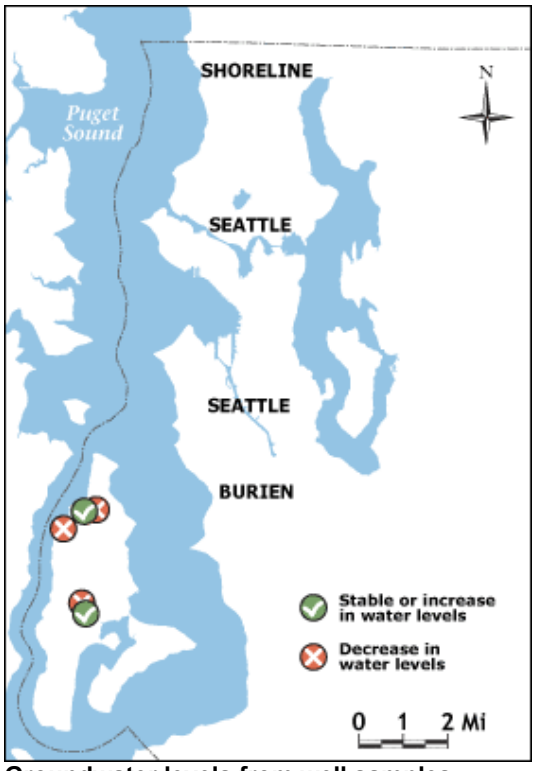
- Properly dispose of Hazardous Waste
- Water irrigation
- Don't Flush the Planet
- Saving Water

Related Information

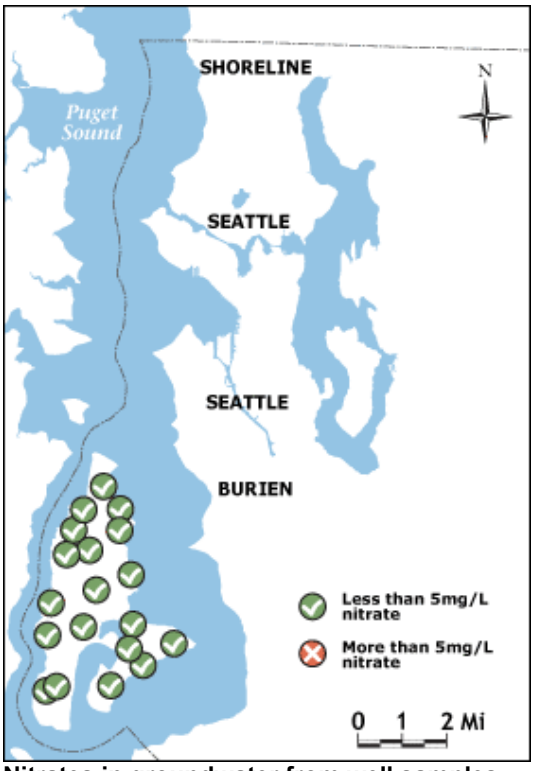
- King County Watersheds
- King County Groundwater Management
- Interactive Groundwater Map
- A Survey of Ditches on County Roads For Their Potential to Affect Storm Runoff Water Quality
- On-Site Runoff Mitigation with Rooftop Rainwater Collection and Use
- Agricultural Waterways in King County
- Environmental Limitations to Vegetation

and increase our understanding of island aquifers. King County intends to produce Vashon-Maury Island-wide water table, contour maps with seasonal variability that will be reported every year.





Groundwater levels from well samples
2006 Findings
Click to download the PDF version.



Nitrates in groundwater from well samples
2006 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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- Mistakes to fix

Share your thoughts by sending an e-mail to Richard Gelb, DNRP Performance Measurement Lead, at richard.gelb@kingcounty.gov so your input can be considered for subsequent updates.

Establishment and Growth in Vegetated Stormwater Biofilters

Updated: September 28, 2007

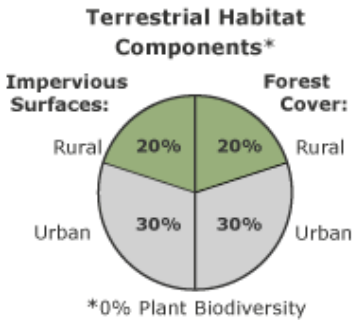
INDICATORS - 2006 ARCHIVE

TERRESTRIAL HABITAT

2006 Rating:

Indicator

King County's Terrestrial Habitat Index is derived from two main groupings of results regarding amounts of forest cover and impervious surface. Our weighting system applies 50 percent each of the forest cover and impervious surface results. Although plant biodiversity is recognized as a relevant contributor to the overall quality of terrestrial habitats, it is not included because there is no data being collected regarding the types and numbers of plants in King County.



- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time

Status

Unincorporated King County is reaching unofficially established goals of maintaining 65 percent or more in forest cover and less than 10 percent impervious surface. It is difficult to assess the condition of terrestrial habitats in urban areas, since no goal has been set for the amounts of impervious surface and forest cover, and no data exits for plant biodiversity.

Influencing factors

Over the past two centuries, increased population and development have substantially altered King County's landscape. Less forests and natural land cover increase the need for manmade stormwater controls and reduce the amount of habitat for animal and plant species.

Existing DNRP response

Land-use regulations were recently updated as part of the Critical Areas Ordinance, which was passed in 2004. These regulations attempt to maintain a minimum of 65 percent forest cover and limit impervious areas to less than 10 percent in rural, unincorporated King County. They also provide extra protection for aquatic riparian areas.

Priority new actions

Under a rural stewardship plan, property owners can develop their property, while still protecting critical areas on a site-specific basis. Rural stewardship plans are developed to protect critical areas while balancing the needs of property owners.

What you can do

Plant trees and reduce impervious or hard surfaces by using pervious pavers in drive and walk ways. Encourage your local city or town to make tree protection regulations stronger. Why trees? Shade for streams? Habitat for native species? What kind of trees? Native trees?

WHAT CAN YOU DO?

At Home

Create your own Native Plant Landscape

Volunteer for a Habitat Restoration Project

At Work

Develop a Forest Stewardship Plan

Reduce Holiday Food Waste

Wasteless Holiday

Related Information

Forestry Topics

King County Ecological Lands

Greenprint for King County

GIS Center iMap

More information about King County's Forest Cover/Imperviousness is available by continuing to the pages for these measures:

- Forest Cover/Imperviousness

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Updated: September 28, 2007

INDICATORS - 2006 ARCHIVE

FOREST COVER AND IMPERVIOUS COVER

2006 Rating:

About this indicator: Increased population and development have substantially altered the landscape in King County over the past two centuries. Of particular interest for the protection of salmon and other aquatic resources is the conversion of forest and natural land cover to hard or impervious surfaces, such as roofs, sidewalks parking lots and roads.

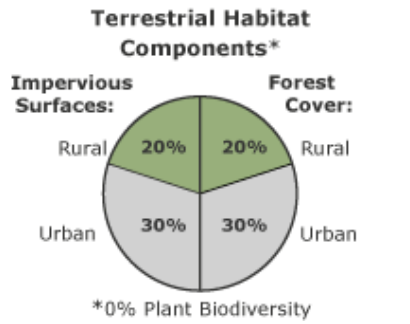
This indicator reflects landscape changes that protect forest and aquatic habitats. The percent of the landscape maintained as forest, and the percent that has been converted to impervious area, is presented watershed-wide for all of King County. Forest data were derived from a 2001 Landsat image, and impervious area data were derived from 2000 multispectral images.

Status: Total land cover was categorized by urban vs. rural areas. Countywide, rural areas (67 percent) have higher forest coverage than urban areas (17 percent). Impervious coverage in urban areas (47 percent) was almost 10 times more than in rural areas (5 percent).

Influencing factors: Forests naturally regulate stormwater runoff, provide habitat for many species and maintain healthy streams and rivers for salmon and other fish. Less forests result in less stormwater control, less habitat for forest species and aquatic systems that are less healthy for fish and other species. Increases in impervious surfaces are generally associated with the highest rates of stormwater runoff, the highest degradation in water quality and the most impacts on forest and aquatic species.

Existing DNRP response: Land-use regulations, recently updated as part of the Critical Areas Ordinance in 2004, attempt to maintain a minimum of 65 percent forest cover and limit impervious areas to less than 10 percent in rural, unincorporated King County. King County DNRP intends to monitor forest cover and impervious areas.

Priority new actions: King County is in the midst of updating its 30-year old Shoreline Master Program, which guides land-use activities along shorelines of marine areas and most lakes and streams in unincorporated King County. The first step in this effort is to review current shoreline conditions, including ecology, public access, land use and historic resources. The program update,



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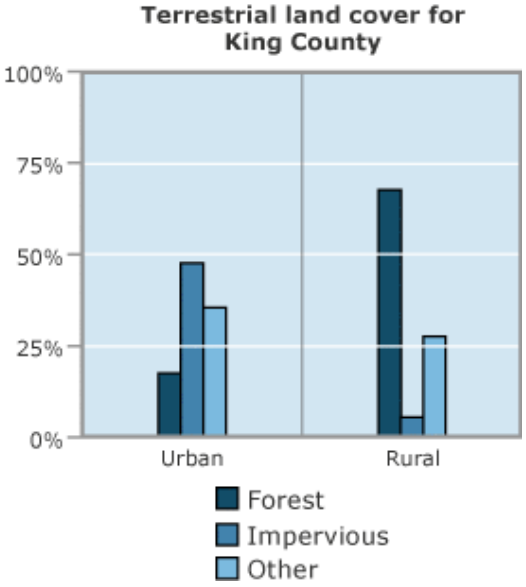
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time



WHAT CAN YOU DO?

At Home

Create your own Native Plant Landscape

Volunteer for a Habitat Restoration Project

At Work

Develop a Forest Stewardship Plan

Smart Growth

Related Information

Forestry Topics

King County Ecological Lands

Greenprint for King County

GIS Center iMap

Native Plants

Snoqualmie Valley farmers' conservation efforts

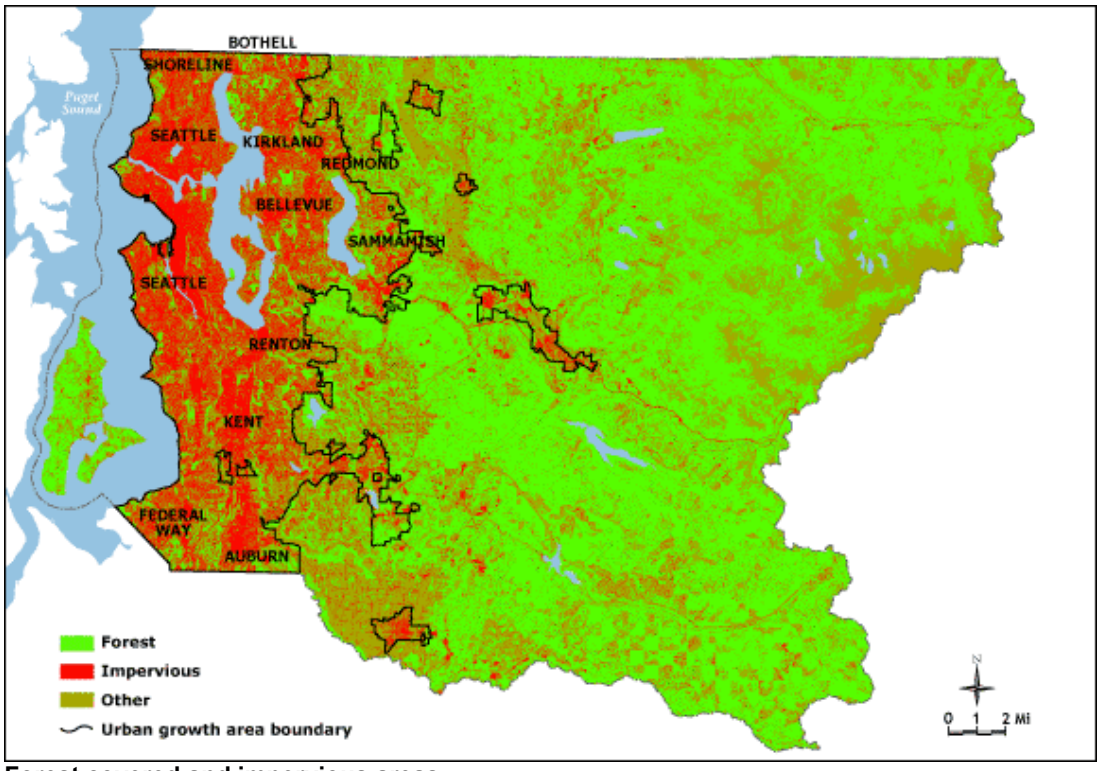
Plant Biodiversity

PCBs Threaten Duwamish River Cleanup

Arsenic and lead contamination in King County soil

Wa Ecology soil study of King County

which is expected to be completed in late 2008, will include changes that will have an effect on this indicator.



Forest covered and impervious areas
2003 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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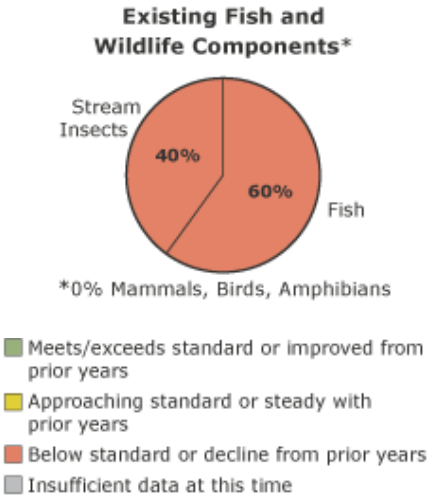
Updated: September 28, 2007

FISH AND WILDLIFE

2006 Rating: ↓

Indicator

King County's Wildlife Habitat Index is derived from two main groupings of results regarding numbers of stream insects and fish. This weighting system applies 40 percent of the stream insects, or benthic indicators of biodiversity index, and 60 percent of fish results. Chinook salmon are the only fish reflected in this category. Other fish species, mammals, birds and amphibians should be included in the assessment of wildlife health, but there is no consistently collected data regarding these animals in King County.



Status

Information gathered over the last 100 years indicates an overall decline in the health of native, naturally spawning salmon populations in Puget Sound watersheds.

Influencing factors

Development and deteriorating water quality impact wildlife habitat — particularly the amounts of hard or paved surfaces, loss of tree cover and other changes to natural environments.

Existing DNRP response

King County serves as the lead agency for three of the four Watershed Resource Inventory Areas (WRIA's) in its boundaries. These WRIA's are groups of representatives from cities and towns, scientists, water purveyors, sewer districts, environmental organizations and citizens that have developed local salmon restoration plans that are now being implemented within their respective watersheds.

Priority new actions

King County is actively working with members of Congress and the state Legislature to secure the funding needed to implement the salmon recovery plans. Recently adopted ordinances updating critical areas and clearing and grading regulations, along with soon-to-be-adopted changes to the Shoreline Master Program should help protect critical salmon habitats.

What you can do

Plant trees and reduce impervious surfaces by using pervious pavers in drive and walkways. Encourage your local city or town to make tree protection regulations stronger. Contact your elected officials and express how important wildlife protections are to you—including salmon restoration.

WHAT CAN YOU DO?

At Home

Home & garden hints for healthy streams & salmon

Be a Salmon Watcher

At Work

Volunteer for a Habitat Restoration Project

Related Information

Salmon and Trout Topics

Shoreline Parcel Characterization

Green-Duwamish Habitat Projects

More information about King County's Fish and Stream Insects is available by continuing to the pages for these measures:

- Fish
- Stream Insects

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Updated: September 28, 2007

INDICATORS - 2006 ARCHIVE

FISH

2006 Rating: ↓

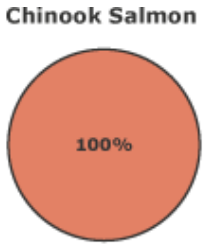
Fish/Chinook Salmon/WRIAS 7, 8 And 9

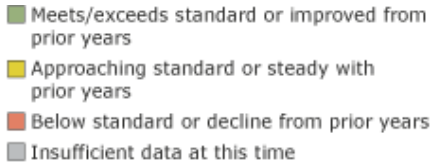
Salmonid fishes native to King County include chinook, coho, sockeye/kokanee, pink and chum salmon, rainbow (including anadromous form called "steelhead"), cutthroat, bull and dolly varden trout and pygmy and mountain whitefish. Each of these species has a diverse life history and relies upon a range of habitats for spawning, rearing, feeding and migration. They also have major cultural, economic and political roles in the Pacific Northwest. Throughout much of Washington state, the harvest and hatchery propagation of these fish populations and to a lesser extent, their habitat, are co-managed by the State of Washington, through the Department of Fish and Wildlife, and the treaty Indian tribes. Although King County does not manage fish populations directly, it does have jurisdictional responsibility for many activities, including land-use regulation, which greatly influences the quantity and quality of salmon habitats.

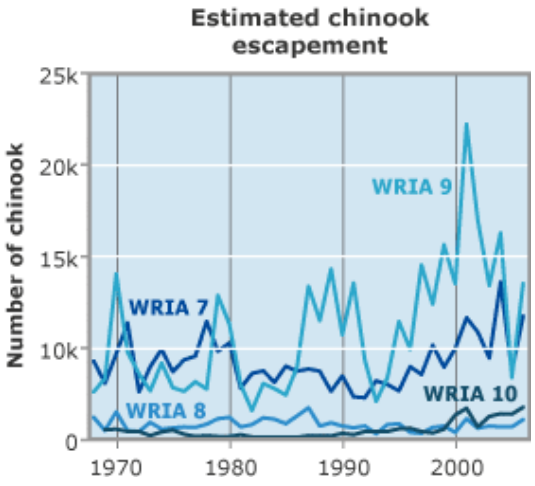
This indicator is based on natural chinook escapement, which is the number of mature, adult chinook returning to their stream of origin to spawn naturally each year. It is an indicator of the abundance of Chinook and can be used to describe the overall health of marine and freshwater ecosystems.

King County includes all or portions of four major watersheds, which are also identified by Watershed Resource Inventory Area (WRIA): the Snohomish (WRIA 7), Cedar/Lake Washington (WRIA 8), Green/Duwamish (WRIA 9) and Puyallup/ White (WRIA 10). Chinook salmon recovery goals were established to be reflective of characteristics of a viable salmon population: abundance, geographic distribution, genetic diversity and productivity. These recovery goals were established for watersheds through the cooperative Puget Sound Shared Strategy process.

Status: 2006 fish returns in each WRIA were up by almost double from 2005, and likely a result of much reduced harvest in British Columbia and Washington waters. Chinook escapement for







WHAT CAN YOU DO?

At Home

- Home & garden hints for healthy streams & salmon
- Be a Salmon Watcher
- Salmon Safe Practices
- Salmon Smart: A Guide to Help People Help Salmon

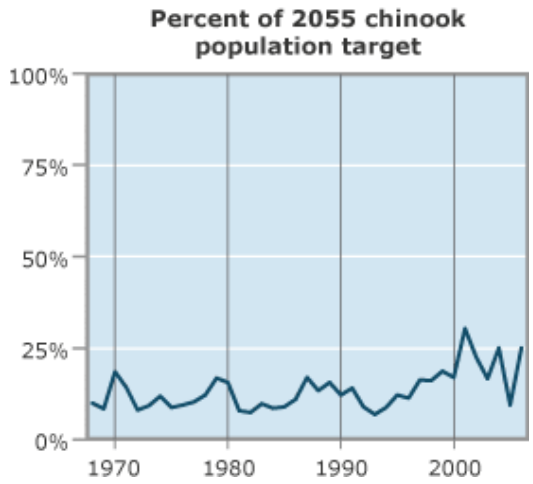
At Work

- Volunteer for a Habitat Restoration Project

Related Information

- Salmon and Trout Topics
- Shoreline Parcel Characterization
- Green-Duwamish Habitat Projects
- Clean river for fish and wildlife
- Salmon ladder award
- Toxic Stormwater Threatens Sea Life

2006 was about 25 percent of the 2055 chinook population target and in general, Chinook escapement throughout the region was much reduced with the notable exception of the Cedar River. Natural variations in returns is expected due to a wide variety of influencing factors.



Influencing factors: Natural chinook escapement is related to the quality of the county's rivers and streams, along with several other factors such as precipitation, hatcheries, harvest, and flow management. Some annual variation in salmon returns is to be expected and unrelated to local human influences. For example, natural cycles of ocean warming and cooling and longer term trends in climate can also greatly affect local salmonid productivity. Local declines in naturally-spawning chinook are believed to be greater than would be expected from cyclic patterns or long-term climate changes alone, however, due to the combined effects of habitat degradation, harvest and hatchery management.

Existing DNRP response: Inter-jurisdictional, watershed-based salmon conservation plans have been completed for WRIAs 7, 8, 9 and 10. The plans were submitted to federal agencies for review in 2005, and they include actions for meeting long-term recovery outcome goals as illustrated in Chart 2. King County serves as the lead agency for two WRIA's and participates in the efforts and activities of all four. The county will continue its participation in the WRIA process and the larger, regionwide Shared Strategy For Puget Sound process to secure funding for and implement the measures identified in these plans toward habitat improvement projects that should help to recover the species.

Priority new actions: The long-term outcome is to recover chinook populations to the average annual abundance targets set for 2055. In addition, King County is entering the implementation phase for the WRIA 7, 8 and 9 Salmon Conservation and Habitat Plans.

Technical Notes

For definitions and more detail.

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Updated: September 28, 2007

STREAM INSECT HEALTH

About this environmental indicator
King County monitors stream health by collecting samples of benthic macroinvertebrates, commonly referred to as "bugs," from selected streams.

Scientists use a scorecard system called the Benthic Index of Biotic Integrity (B-IBI) to rank the health of streams. The scores are based on the types of stream bugs living in the stream and the number of different kinds of stream bugs present. By using this scoring system, we can compare very different streams to each other and rank their ecological health.

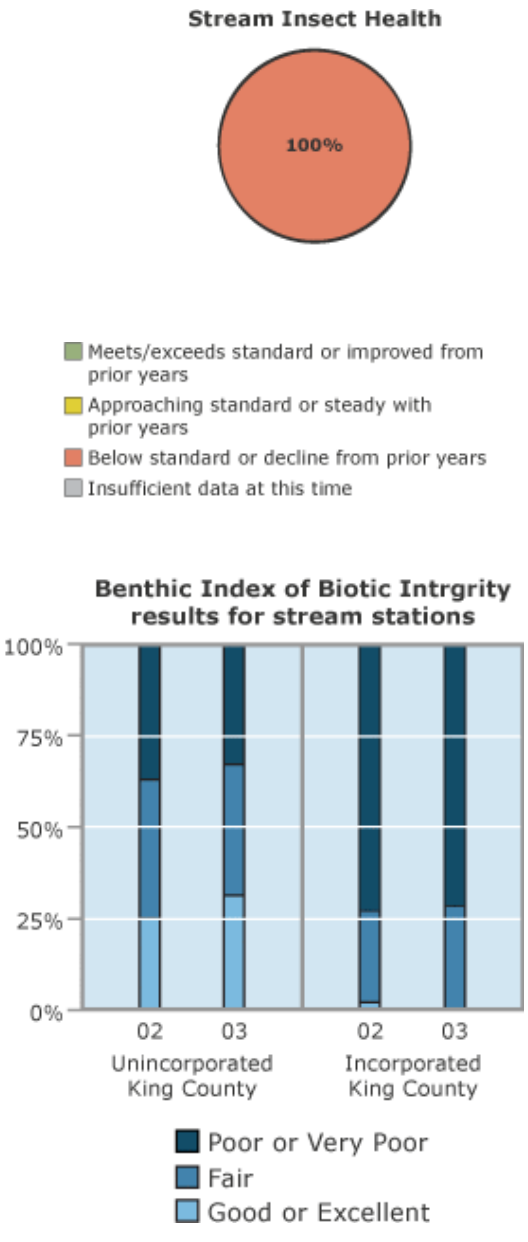
Status: The 2003 data are the most recent available. A total of 128 stations in 55 streams within 15 subbasins across the Lake Washington/Cedar/Sammamish watershed (WRIA 8) and the Green/Duwamish watershed (WRIA 9) were sampled. Results for unincorporated and incorporated areas within King County are dramatically different. In 2003, 31 percent of the sampled streams in unincorporated areas had benthic insect communities in good or excellent condition, whereas none of the stream stations in incorporated areas rated this high.

Influencing factors: Development, pollutant runoff, loss of forest cover, stream and wetland ecological health, elevated stream temperatures, fish migration barriers, and of invasive and non-native plants are a few factors that can have an affect on the stream insect populations. Insufficient flows in streams can reduce number of sampling sites, affecting annual comparisons.

Existing DNRP response: WLR continues to implement programs focusing on minimizing degradation from development and pollutant runoff from farms, preventing the loss of forest cover and its numerous stormwater benefits, or implementing watershed improvement projects. King County's Stormwater Program focuses on flow control to minimize adverse effects from development, provides surface water design standards for new development and inspects and maintains stormwater control facilities.

The county continues to work with landowners to restore streamside parcels that have important benefits as aquatic resources. In addition, WLR's capital projects program builds small and large

2006 Rating:



WHAT CAN YOU DO?

At Home

Embrace Natural Yard Care

Home & garden hints for healthy streams & salmon

At Work

Apply Integrated Pest Management in your landscaping

Related Information

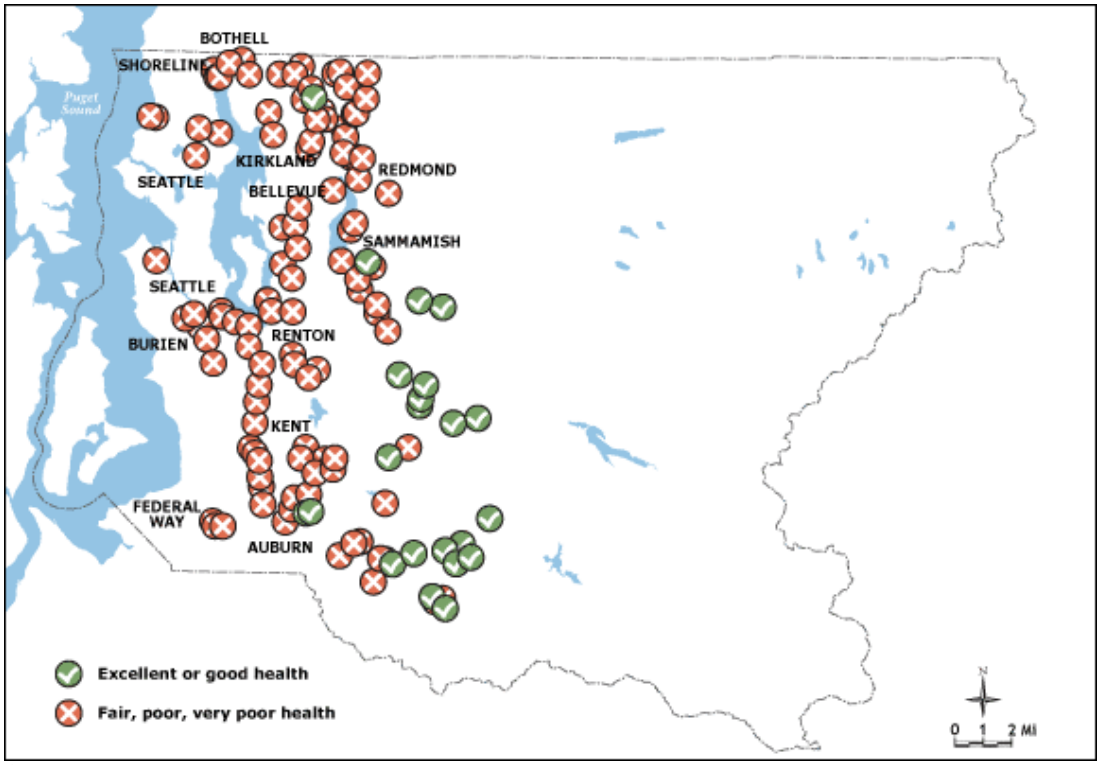
Stream Bug monitoring

Shoreline Ecological Characterization

stream and wetland enhancement projects. Basin stewards work with the local community to respond to resident's inquiries for watershed protection, coordinate efforts among diverse public agencies, facilitate watershed project implementation, provide assistance to monitoring programs and provide public education opportunities. The Agriculture Program works with farmers and livestock owners to prevent agricultural pollutants from running off into streams.

Priority new actions: Implementation of the county's Critical Areas Ordinance and federal total maximum daily load (TMDL) requirements for impaired water bodies are regulations that will also support water quality improvements in both incorporated and unincorporated areas.

Data from 2005 are currently being analyzed. The taxonomic analysis of the 2006 samples will be complete in summer of 2007.



Stream Insect Health
Findings from B-IBI 2003
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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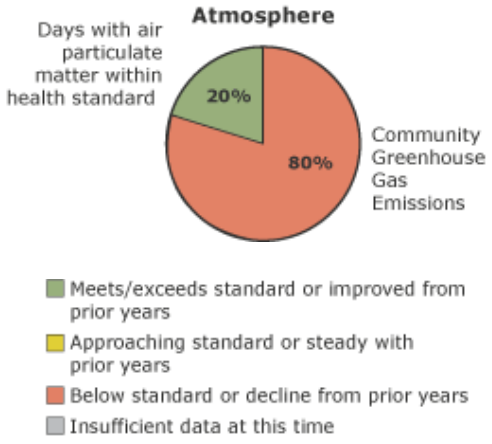
INDICATORS - 2006 ARCHIVE

ATMOSPHERE

2006 Rating:

Indicator

This atmosphere indicator considers both air quality and greenhouse gas (GHG) emissions. The air quality measure is for levels of small particulate matter in our air as sampled at 11 monitoring sites across King County. The GHG emissions data is from emissions estimates completed by the Puget Sound Clean Air Agency. The GHG reduction target was established in the 2007 King County Climate Plan. The scope of the GHG measure is geographic King County — including all of the households, businesses and vehicle travel.



As you can see from the pie chart, the priority emphasis is on reduction of greenhouse gas (GHG) emissions. While fine particulate matter (PM 2.5) is our number one air quality concern to protect public health, GHG emissions causing global warming will have unprecendented environmental, social and economic impacts. In fact, global warming is fast becoming the pre-eminent issue of our time both locally and globally.

Within King County we are expecting a 50 percent loss of snowpack within 50 years. This reduction of snow (and snow-water equivalent) will adversely affect forests, farms, fish, hydropower and drinking water availability. There will be an increase in severe weather patterns causing more intense droughts and floods. There will be an increase in human disease such as West Nile virus from increase in mosquito infestation. Forests will be increasing at risk from Pine Beetle infestation and forest fires, even in wetter Western Washington. Sea level rise will erode coastline and affect infrastructure along our coasts. These are impacts just within King County. Additional impacts across the state, the country and the globe will add addition stresses to our economy and quality of life.

More information about King County's Air Quality and Greenhouse Gas Emissions is available by continuing to the pages for these indicators:

- Air Quality
- Green House Gas Emissions

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WHAT CAN YOU DO?

At Home

Use less energy more efficiently

Heat smart with wood stoves and fireplaces

Help Clean the Air Around Puget Sound

At Work

Help Employees Bus Commute

Bike Commute

Related Information

King County Executive Global Warming Initiative

2005 Climate Change Conference Results

Puget Sound Clean Air Agency

Puget Sound Maritime Air Emmisions Projects

Maritime Pollution in the Puget Sound

Puget Sound Maritime Air Emmissions Study Results

Updated: September 28, 2007

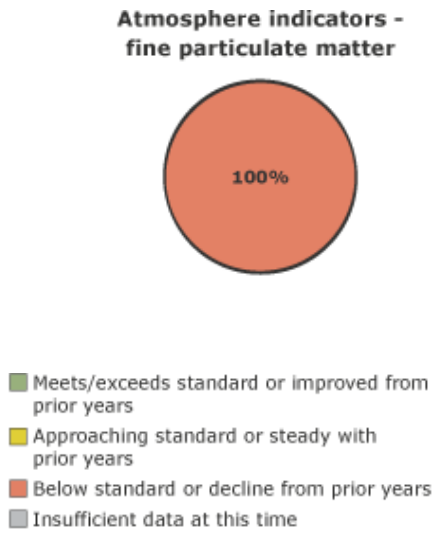
INDICATORS - 2006 ARCHIVE

AIR QUALITY

2006 Rating: ↑

Atmosphere indicators - fine particulate matter (PM2.5)

About this indicator: Fine particulate matter less than 2.5 micrometers in diameter (PM2.5) contributes to increased respiratory disease, decreased lung function, heart problems, and premature death. There are many sources of PM2.5.



Drivers/influencing factors: The greatest contributing source to PM2.5 in the Puget Sound area is wood smoke, especially from fireplaces and woodstoves, in winter months when PM2.5 concentrations are highest. While wood smoke contributes the greatest mass of PM2.5, particulate matter from diesel engines is the most highly toxic.

Status: In 2006, readings at several King County monitoring sites exceeded the Puget Sound Clean Air Agency's PM2.5 health goal of 25 micrograms per cubic meter. Concentrations at some of these sites were not far below the federal daily standard of 35 grams per cubic meter. Measurements taken at these sites are affected by a variety of sources, including wood smoke, vehicles exhaust, industrial activity, and port operations.

Existing responses: The Puget Sound Clean Air Agency has several programs designed to reduce PM2.5 emissions, including programs specifically targeted to address wood smoke. The agency enforces burn bans in winter months, when weather conditions contribute to high PM2.5 levels. The agency and its partners perform outreach and education to encourage people to use cleaner burning practices and upgrade older wood-burning stoves and fireplaces. Other programs include evaluating and expanding the areas where outdoor burning is prohibited and the agency's Diesel Solutions program, to reduce diesel engine emissions through voluntary, incentive-based projects.

Priority new actions: The recent tightening of the federal daily PM2.5 standard (from 65 to 35 grams per cubic meter) has renewed the effort to reduce PM2.5 emissions so that the region can continue to stay in federal attainment. The Puget Sound Clean Air Agency embarks on a comprehensive review of its wood smoke programs in 2007 and 2008, to determine measures that can be taken to further reduce PM2.5 emissions locally and regionally. Among other measures, this review will examine the feasibility of implementing an existing Seattle-King County ordinance requiring older, dirtier-burning woodstoves be replaced when homes in urban areas are sold. Additionally, the agency will be exploring possible funding sources to expand its efforts in diesel emissions reductions beyond public fleets.

WHAT CAN YOU DO?

At Home

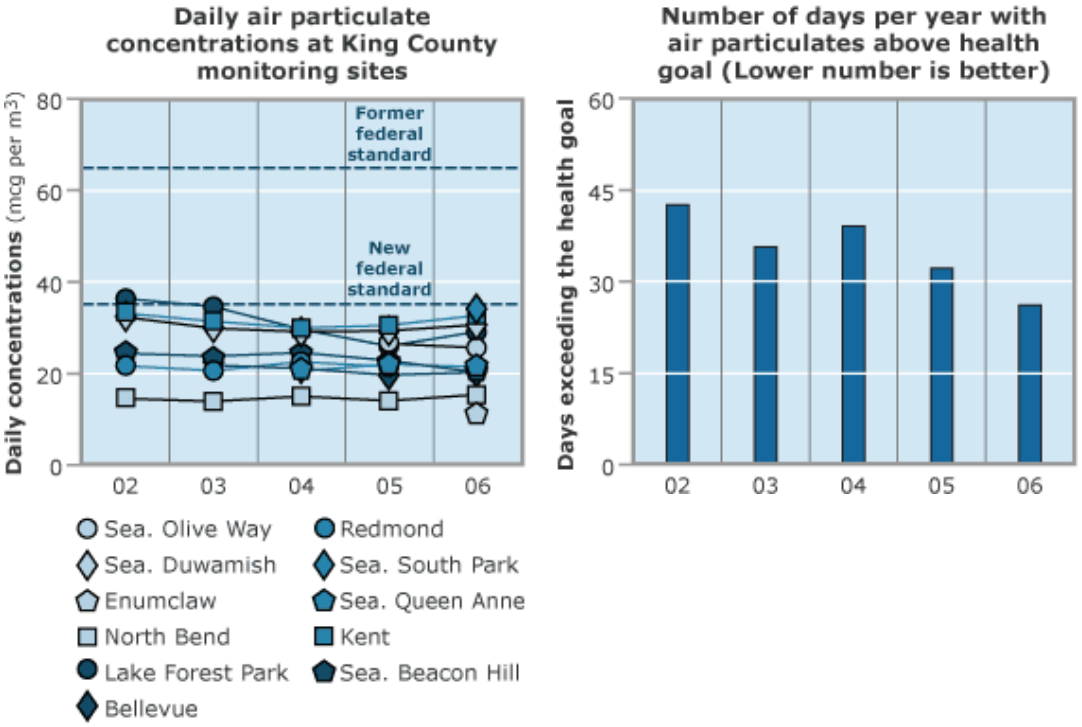
- Use less energy more efficiently
- Heat smart with wood stoves and fireplaces
- Cascade Bicycle Club
- EPA air quality frequently asked questions

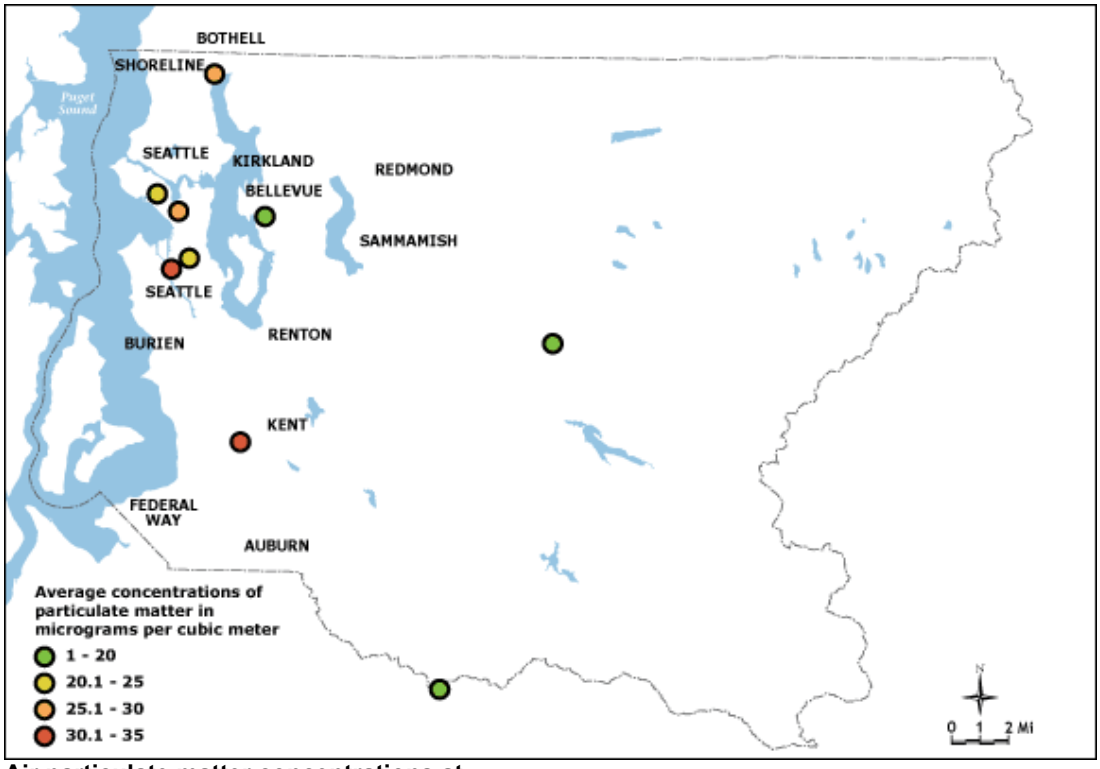
At Work

- Help Employees Bus Commute
- Bike Commute

Related Information

- Puget Sound Clean Air Agency
- General information on fine particulate matter
- Information on diesel emissions reductions
- The Puget Sound Clean Air Agency's Annual Data Summary (2005)
- How can I help clean our air?
- Information on wood smoke and health effects
- How are ports and partners reducing emissions?

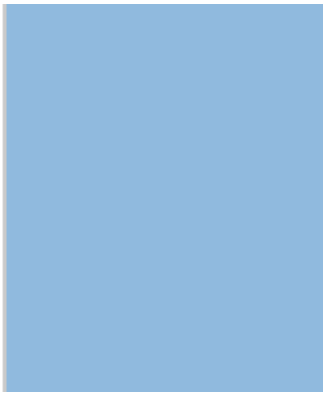




Air particulate matter concentrations at sampling sites
2006 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.



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Updated: September 28, 2007

GREEN HOUSE GAS EMISSIONS

2006 Rating:

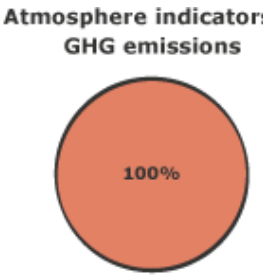
Atmosphere indicators — GHG emissions

Drivers: Increases in Greenhouse Gas Emissions (GHG's) can be primarily attributed to more use of fossil fuels for transportation and building energy. Vehicle Miles Traveled in King County and energy use in homes and businesses have been on a steady increase.

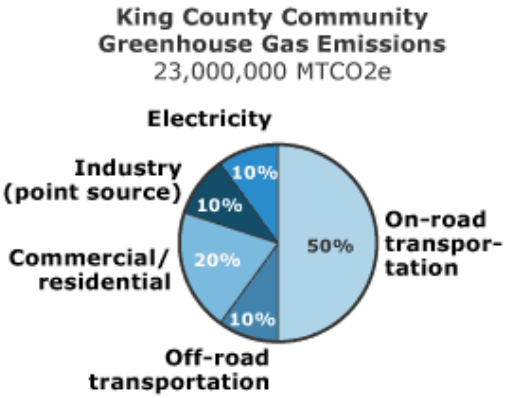
Status: As of 2002, the King County region emitted approximately 23 million metric tons of carbon dioxide (CO2) equivalents annually. In 2003 King County government operations generated about 420,000 metrics tons of CO2 equivalents.

Existing response: The King County Executive's Office has developed and forwarded to the King County Council a climate protection plan that seeks to address both community (regional) and corporate (organizational) climate polluting emissions. The actions to reduce climate pollution are aimed at using the county's four levers of change: land use, transportation, environmental management and renewable energy.

Priority new actions: For DNRP operations, the priorities are: beginning processing and using the landfill gas from Cedar Hills, increasing the use of biodiesel in fleet vehicles, and maintaining high rates of biogas capture and re-use at wastewater treatment facilities. Other new actions will include increasing the use of cement substitutes in construction projects, eliminating inefficient light bulbs and improving energy efficiency at buildings and plants.



- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time



Technical Notes

For definitions and more detail.

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WHAT CAN YOU DO?

At Home

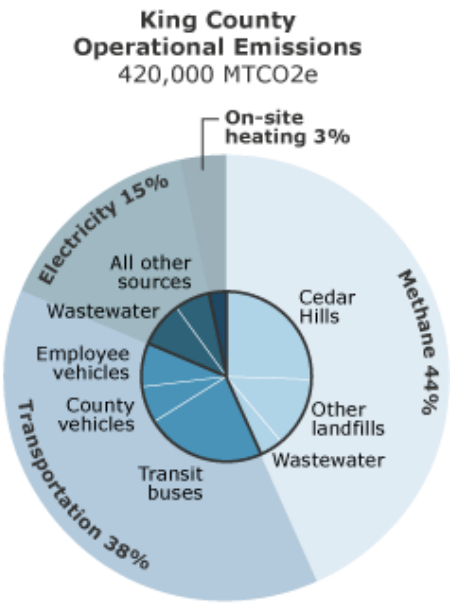
- Use less energy more efficiently
- Heat smart with wood stoves and fireplaces
- Calculate your GHG Emissions
- Reduce Your GHG Emissions
- Develop Density

At Work

- Help Employees Bus Commute
- Bike Commute

Related Information

- King County Executive Global Warming Initiative
- 2005 Climate Change Conference Results
- Puget Sound Clean Air Agency
- Biodiesel Buses
- King County Global Warming Action Plan
- Green house emmisions challenge
- Northwest Natural Yard Days
- Puget Sound Clean Air Agency's climate protection information



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Updated: September 28, 2007

PERFORMANCE MEASURES - 2006 ARCHIVE

ENVIRONMENTAL INDICATORS					PERFORMANCE MEASURES			
Marine Habitat	Freshwater Habitat	Terrestrial Habitat	Fish and Wildlife	Atmosphere	Environmental Quality	Sustainable Resources	Productive Partnerships	Price of Service

DNRP 2006 PERFORMANCE MEASURES

2006 Rating: ⇔

These measures present the degree that DNRP programs are achieving their stated targets. Because of the breadth of DNRP programs, the department's goals and performance measures address topics that are environmental, social and fiscal in nature.

DNRP distinguishes between environmental indicators and performance measures based on the degree of the agency's influence. Measures that have many contributing factors are included as indicators, while measures that are strongly influenced by DNRP policies, programs, and practices are considered performance measures.

Performance Measures

DNRP organizes performance measures under its four goal areas:

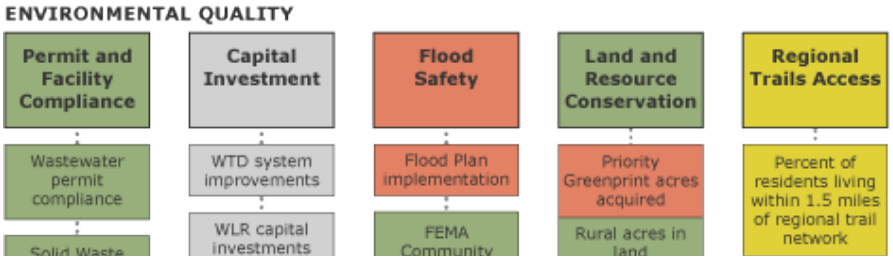
- Environmental Quality
- Sustainable Resources
- Productive Partnerships
- Price of Service

Under each goal are four to six objectives, or roll-up measures, each of which has a pie chart for a quick summary of performance in this area. Below the summary/roll-ups are details of individual measures and, where relevant, technical notes with specific information about data sources or anomalies with the measure information.

Results on DNRP performance measures use a simple red/yellow/green/gray designation, where:

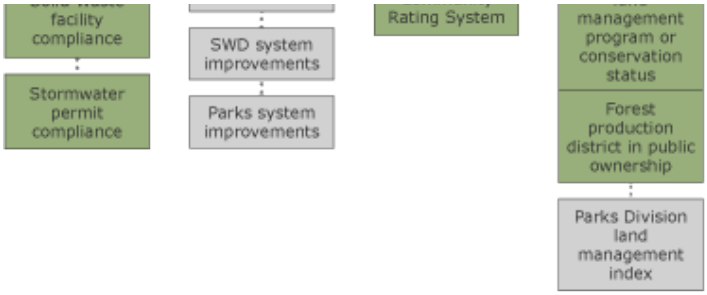
- Green signifies meeting or exceeding a stated target;
- Yellow signifies results within 10 percent of the target;
- Red signifies the need for improvement; and
- Gray signifies insufficient data at this time.

DNRP 2006 PERFORMANCE MEASURES

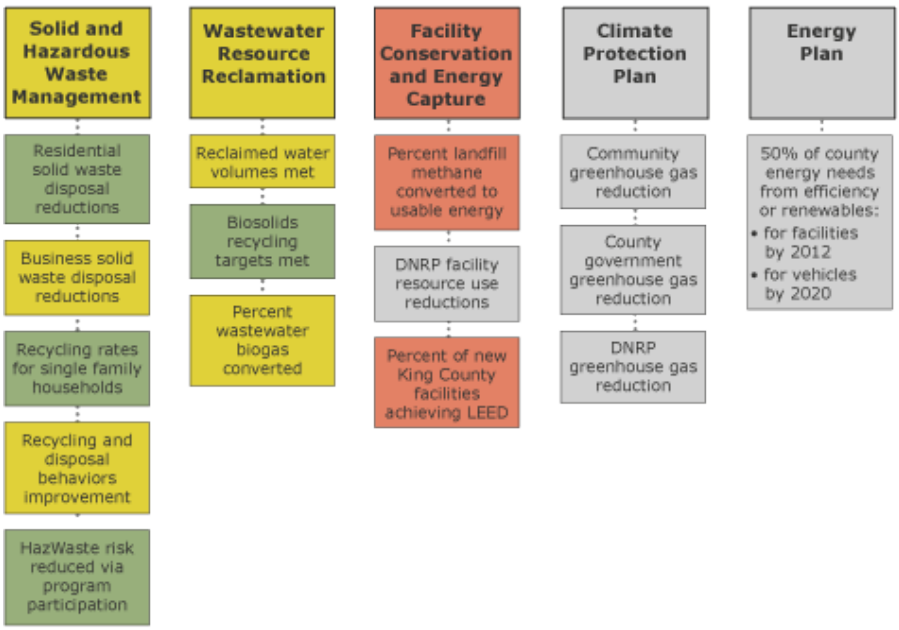


Related Information

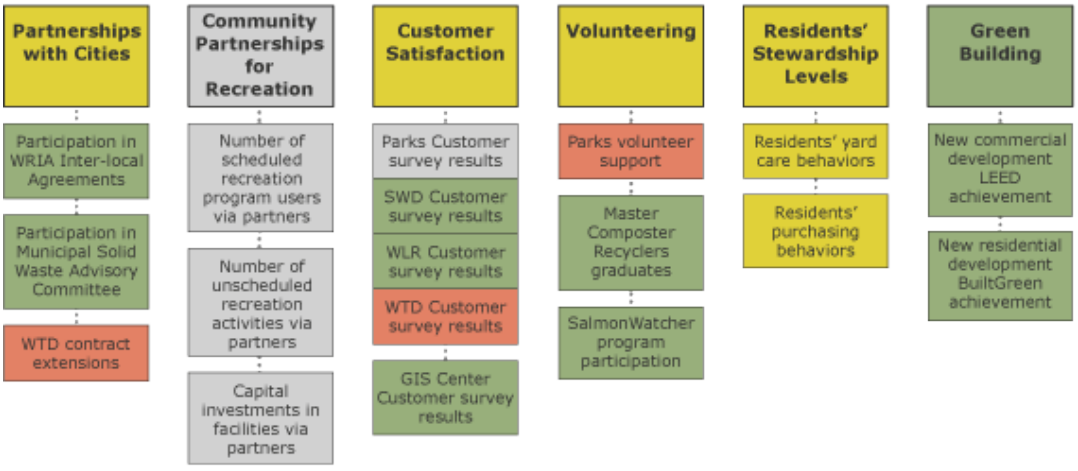
- DNRP Annual Report
- Natural Resource Lands
- Solid Waste Recycling
- Stormwater Capital Projects

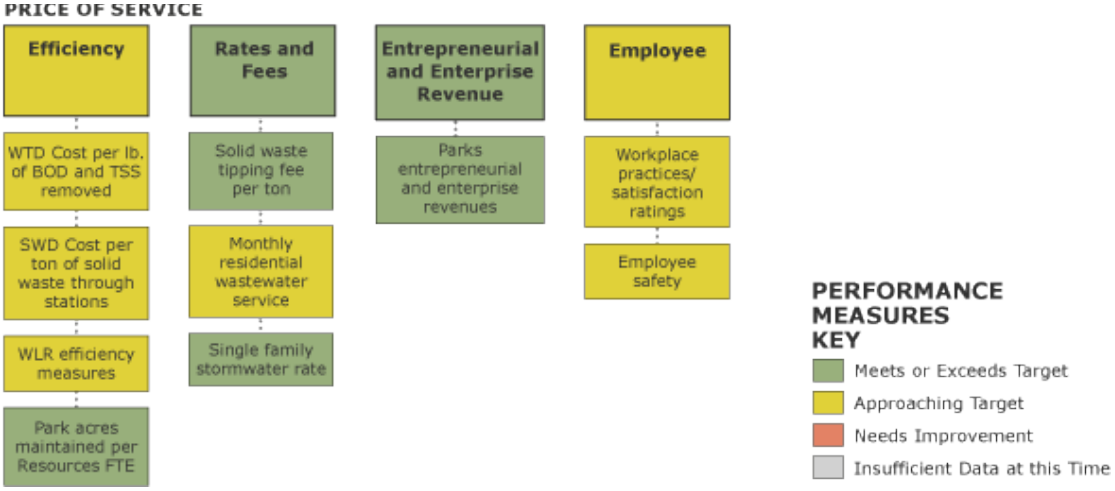


SUSTAINABLE RESOURCES



PRODUCTIVE PARTNERSHIPS





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PERFORMANCE MEASURES - 2006 ARCHIVE

ENVIRONMENTAL QUALITY MEASURE

2006 Rating: ⇔

This roll-up measure summarizes the degree DNRP is achieving its **Environmental Quality goal:**

Deliver high quality environmental services that protect and restore the environment, enhance our community, and protect public health and safety.

2006 results

DNRP's rating for the performance measures that support this goal is **yellow** — signifying results are within 10 percent of target.

Areas under this goal where DNRP performed well:

- Permit and facility compliance for the wastewater, solid waste and stormwater programs

Areas under this goal where DNRP performance approaches target:

- Land and resource conservation
- Residents living within 1.5 miles of the regional trail network

Areas under this goal where DNRP performance needs improvement:

- Flood Safety (the comprehensive King County Flood Hazard Management Plan was recently approved)

Areas under this goal where data is insufficient:

- Capital investment (a countywide mechanism for measuring progress on capital investment was established in early 2007, but cannot be applied retroactively to 2006 capital projects)

Key influencing factors

DNRP divisions and programs devote much effort into ensuring facility and permit compliance, which are consistently achieved. This achievement is based in large part on infrastructure maintenance and upgrades through capital improvement and asset management work.

The flood safety rating was influenced by the timing of the development of the flood hazard management plan — because the plan was adopted late in 2006 and formally adopted by the Metropolitan King County Council in January 2007, there was no time to make progress on implementation.

Successes within the land and resource conservation measures are due in part to the relationships that rural and resource program staff have built with forest and farm landowners.

This is the first year DNRP has measured the percentage of residents living within 1.5 miles of King County's regional trail network. Cooperative relationships with cities and historic investment in new

Related Information

Brightwater Project

Stormwater Capital Projects

Interactive Stormwater Projects Map

trails allow such a high percentage of residents to have easy access to King County's 175 miles of regional trails.

Strategies going forward

DNRP will continue to improve processes and systems to ensure its wastewater plants, transfer stations and landfills, and the stormwater program in unincorporated King County meet or exceed regulatory requirements. The department will seek to increase the monitoring of the environmental conditions that our programs seek to improve, which will help ensure permit compliance.

Over the next few years, DNRP will develop and implement new ways of tracking progress on capital projects, including a scorecard for project characteristics, such as energy efficiency and other sustainability features.

With the new King County Flood Control Zone District in place, DNRP will implement its flood hazard management plan which advances both public safety goals and ecological improvements.

DNRP's land and resource conservation efforts will expand to better use all of the tools available, including public acquisition of key parcels and promotion of enhanced stewardship on private lands, plus innovative solutions such as King County's nationally acclaimed transfer of development rights program.

Through the proposed acquisition of the Eastside rail corridor from Renton to Snohomish, DNRP hopes to significantly expand the regional trail network and provide a viable commuting option. Other projects could include establishing connectors to link separate trails into a more complete network.

More information about King County's Facility/Permit Compliance, Land and Resource Conservation, Regional Trail Access, Flood Safety, and Capital Investment is available by continuing to the pages for these performance measures:

- Facility/Permit Compliance
- Land and Resource Conservation
- Regional Trail Access
- Flood Safety
- Capital Investment

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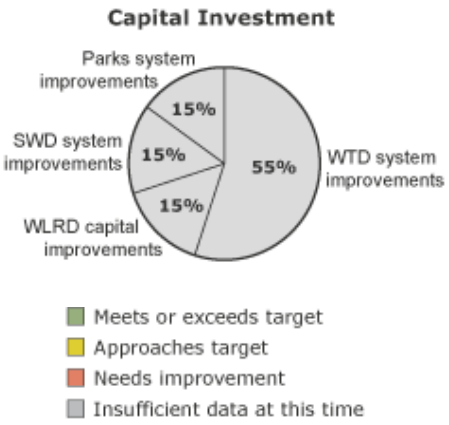
PERFORMANCE MEASURES - 2006 ARCHIVE

CAPITAL INVESTMENT

2006 Rating:

About this measure: DNRP invests significant financial resources into system improvements of the natural and built environment. The Wastewater Treatment Division is focusing capital investments on increasing reliability and expanding capacity of the wastewater conveyance and treatment system. The Parks Division has been primarily steering capital investments toward improvements in the regional trail network. Solid Waste Division capital projects have been targeting transfer stations improvement, while the Water and Land Resource Division has been investing in habitat enhancements and protecting homes and businesses from flooding.



In 2007 all King County departments were given direction for tracking the rate for achieving capital project milestones. Because the milestones and tracking system were not yet established in 2006, this is a 'grey' or no data measure for 2006. However, summary information about capital projects is provided below, as well as maps showing the locations of capital investments over recent years.

Wastewater Treatment Division (WTD)

Capital investment summary

The WTD embarked on one of its biggest capital construction efforts ever in 2006, investing nearly $250 million in more than two dozen major sewer improvement projects and numerous smaller ones. The projects were carried out as part of the Regional Wastewater Services Plan, a 30-year comprehensive plan adopted by the King County Council in 1999.

Projects included rehabilitating aging facilities to ensure continued reliability, expanding existing ones and building new facilities such as the Brightwater treatment system to provide enough capacity for the region's growing population.

Major projects under construction in 2006 also included:

- Controlling combined sewer overflows;
- Cleaning up contaminated sediment in the Duwamish River and Elliot Bay;
- Constructing treatment facilities in Vashon and Carnation;
- Upgrading and expanding three pump stations at Hidden Lake, Juanita and Pacific;
- Replacing aging pipelines and adding pipeline capacity in several locations in the system; and
- Developing a distribution system "backbone" for reclaimed water from the Brightwater treatment facility.

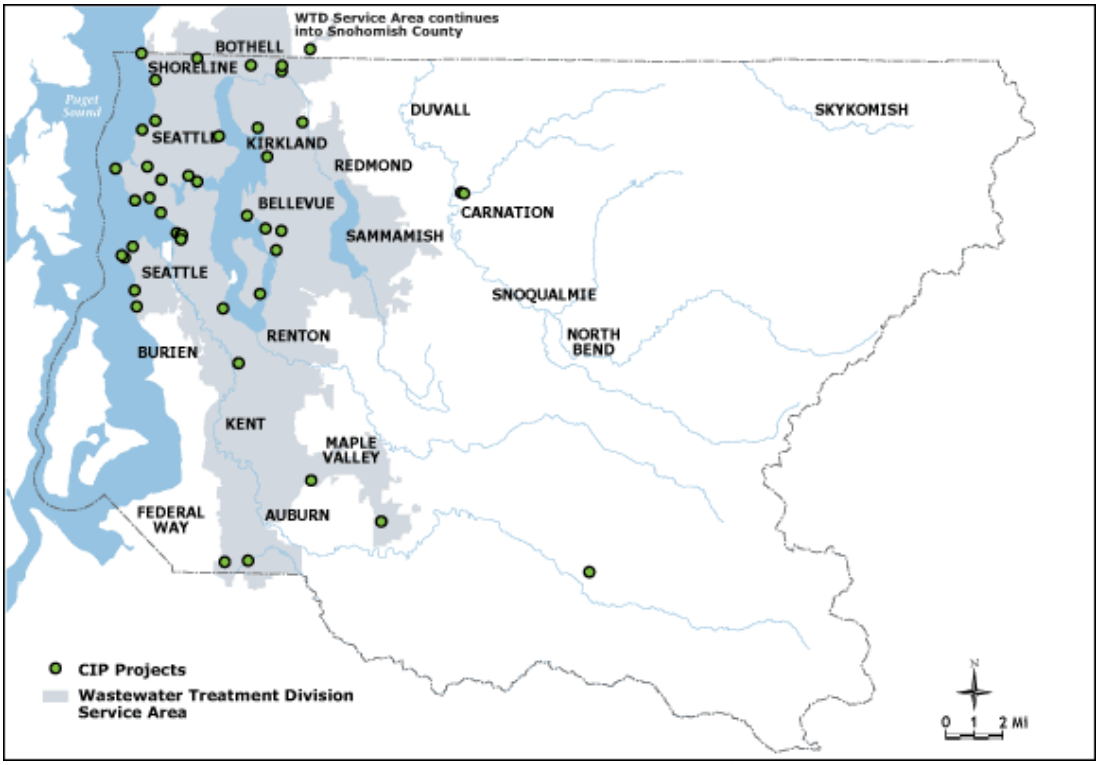
Related Information

Brightwater Project

Stormwater Capital Projects

Interactive Stormwater Projects Map

Business Plan



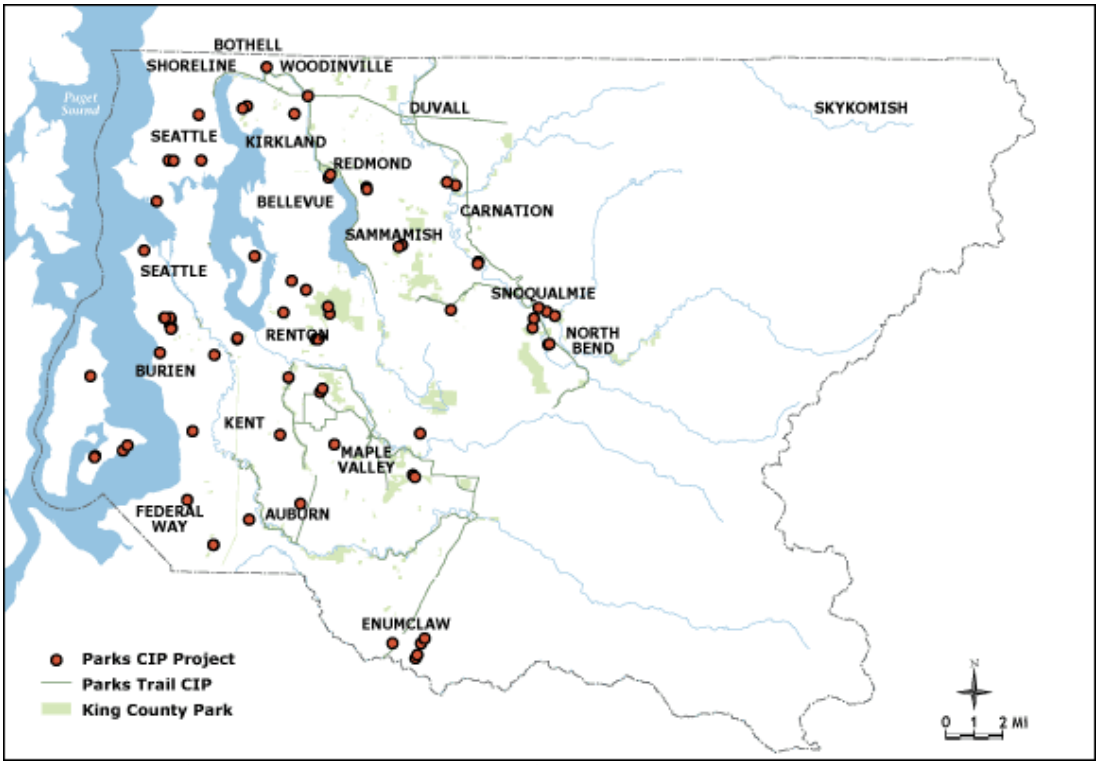
Wastewater Treatment Division Capital Improvement Project (CIP) Locations
2005 - 2007
Click to download the PDF version.

Parks Division

Capital Investment Summary

King County's Parks Division embarked on one of its biggest capital construction efforts ever in 2006 in its Regional Trail System, investing over 50% of its budget, or $10 million, in acquisition, development and major infrastructure improvements. The projects were carried out as part of the 2004 Regional Trail Inventory and Implementation Guidelines Plan, a functional plan adopted as part of the county's Comprehensive Plan.

Projects included rehabilitating aging bridge and trestle structures to ensure continued reliability, acquisition of new right-of-way to secure land along regional trail corridors for future development, expanding existing trails to connect missing links that will serve a greater number of users in the urban and rural areas. Other major projects under construction in 2006 are consistent with the Parks Division's Business Transition Plan which calls for major investments that preserve the County's role as steward of regional trails, reduce operations and maintenance costs, generate new revenues to support the Division's operating budget or create new recreation opportunities through partnerships with community sports organizations.

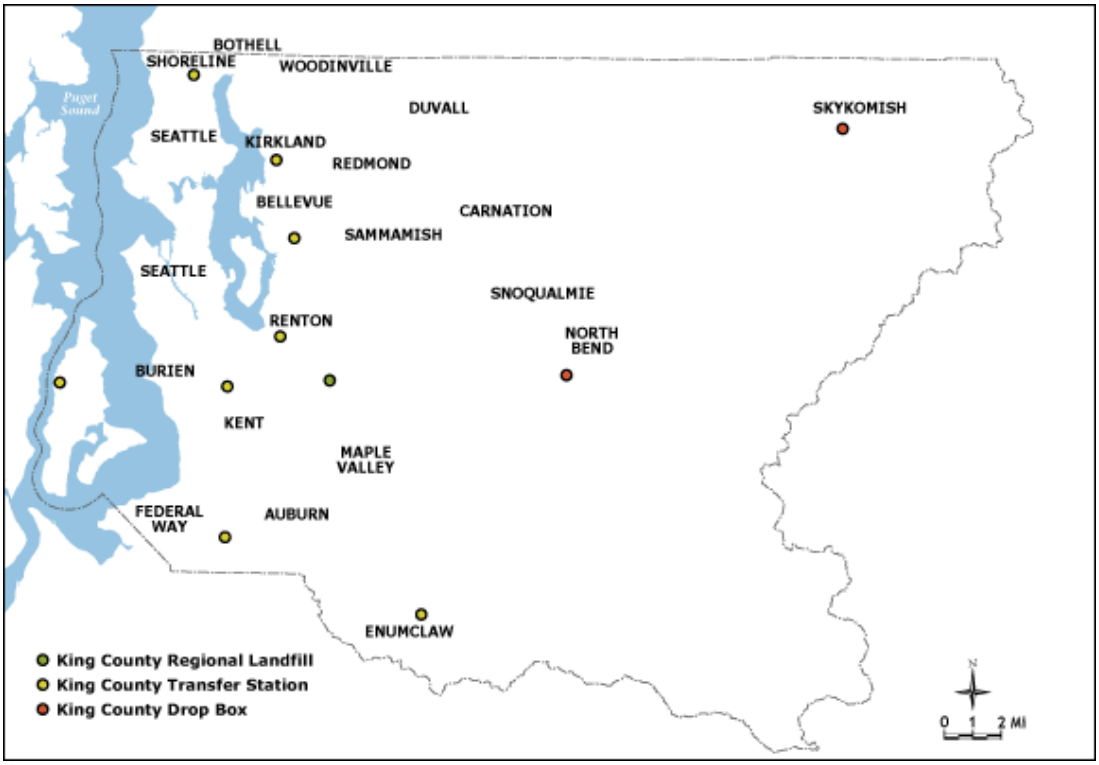


Parks Division Capital Improvement Project (CIP) Locations
2004 - 2007
Click to download the PDF version.

Solid Waste Division (SWD)

Capital Investment Summary

In 2006, the division began modernizing the solid waste transfer system in preparation for the eventual closure of the Cedar Hills Landfill and transition to waste export. The first facility to be renovated is the First Northeast Transfer Station which was closed and deconstructed. Construction of a new station began and is well under way with construction of the elevated tipping floor nearly complete. The new building will have several sustainable design features, including solar panels, rainwater harvesting for dust control and the use of recycled materials. Completion is slated for November 2007.

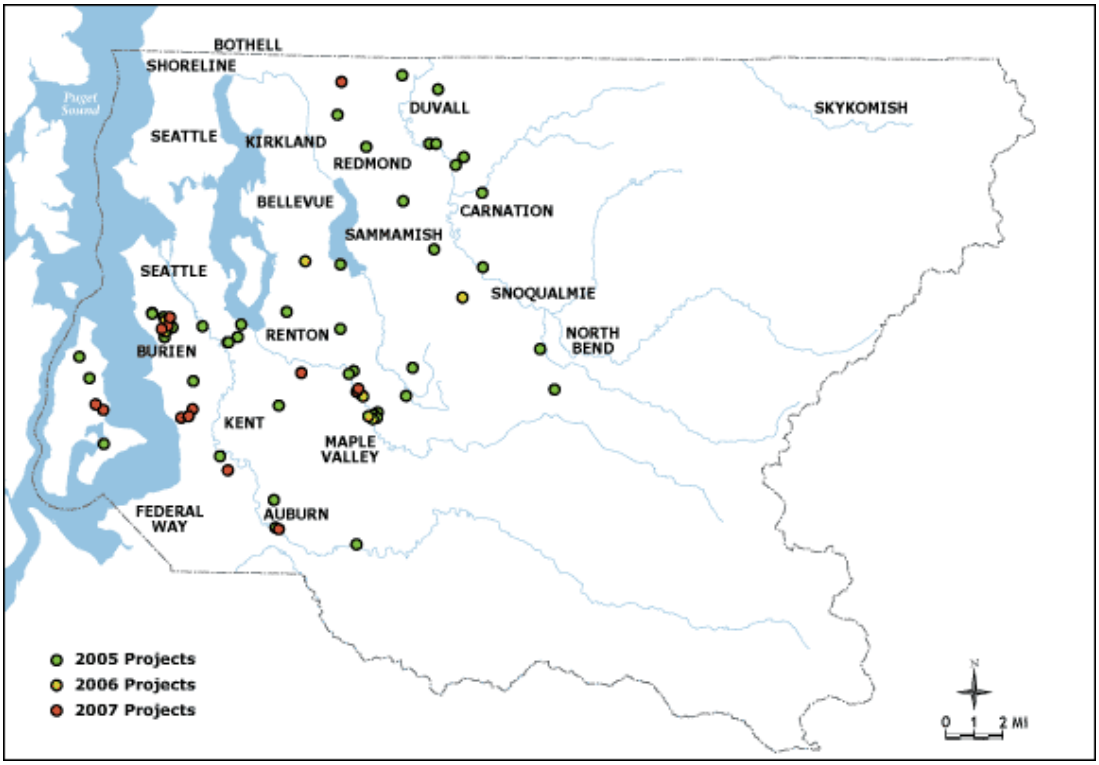


Solid Waste Division Capital Improvement Project Locations
Click to download the PDF version.

Water and Land Resources Division (WLRD)

Capital Investment Summary Restoring and Protecting Waterways

Every year, almost 30 percent of King County generated surface water management fees are spent on large, capital improvement projects to restore waterways and acquire ecologically sensitive property. In 2006, six major and dozens of smaller projects were constructed. Work continues on various aspects of the multi-year Taylor Creek restoration and revamping White Center's drainage system.



Water and land resources division capital improvement project locations
2005 - 2007
Click to download the PDF version.

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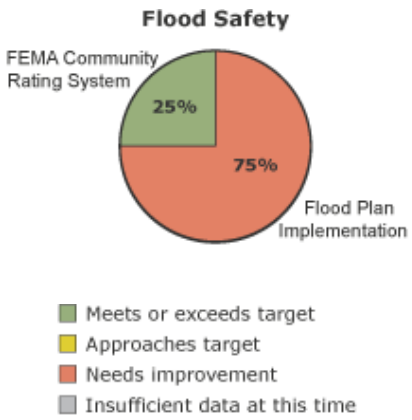
PERFORMANCE MEASURES - 2006 ARCHIVE

FLOOD SAFETY IN KING COUNTY

2006 Rating: ↓



About this measure: To accurately gauge the performance of King County's Flood Safety Program, this measure combines the National Flood Insurance Program's Community Rating System value with progress made in implementing the levee and revetment improvement projects and flood reduction activities described in the 2006 Flood Hazard Management Plan.

The National Flood Insurance Program's Community Rating System (CRS) is a voluntary federal incentive program that recognizes and encourages community floodplain management activities that exceed minimum federal standards. Based on this rating, individual flood insurance premiums are adjusted to reflect the reduced flood risk in the county. The CRS also encourages programs and projects that preserve or restore the natural state of floodplains and protect these functions. The CRS encourages communities to coordinate their flood loss reduction programs with local jurisdictions, Habitat Conservation Plans and other public and private activities that preserve and protect natural and beneficial floodplain functions.

The 2006 Flood Hazard Reduction Plan was approved by the King County Council late in 2006. In 2007, a new countywide flood control zone district was created. The advisory group composed of elected officials and a citizen representative from jurisdictions throughout King County is meeting over the summer to discuss funding for the plan's implementation. The plan calls for strengthening several river levees and revetments primarily along the Green and Cedar Rivers, originally built in the 1960's.

Observations: King County is in the top one percent of all participating communities and is the highest rated county in the nation for its floodplain management program and services. As a result, flood insurance in Special Flood Hazard Areas is reduced by 35 percent annually for policyholders in unincorporated King County. This translates to a $450,536 annual or $283 average savings per policy. In addition to this cost savings, more important benefits result from activities that save lives and reduce property damages.

Since the 2006 Flood Hazard Management Plan has only recently been adopted and funding for the plan has not yet been approved, tracking implementation of the plan has yet to begin. This part of the performance measure is a placeholder once work does begin.

Our Strategy: King County will work with FEMA and ISO representatives to integrate CRS credit allowance for the recently adopted 2006 Flood Hazard Management Plan, the recent completion of the Lower Snoqualmie River floodplain mapping study, as well as any other creditable activities into the county's CRS Program certification package during the next round of program verification. The 2006 Flood Hazard Management Plan will be coordinated with the King County All Hazards Plan to ensure these plans meet the most current policies and standards of the CRS Coordinators Manual to optimize CRS credit points.

As implementation of the 2006 Flood Hazard Management Plan begins, its progress will be monitored and reported by this measure. This information will offer local jurisdictions, special districts, state and federal agencies, Water Resource Inventory Areas, Tribes, and other stakeholders confidence that King County is implementing the plan and our shared resources efficiently toward reducing flood

Related Information

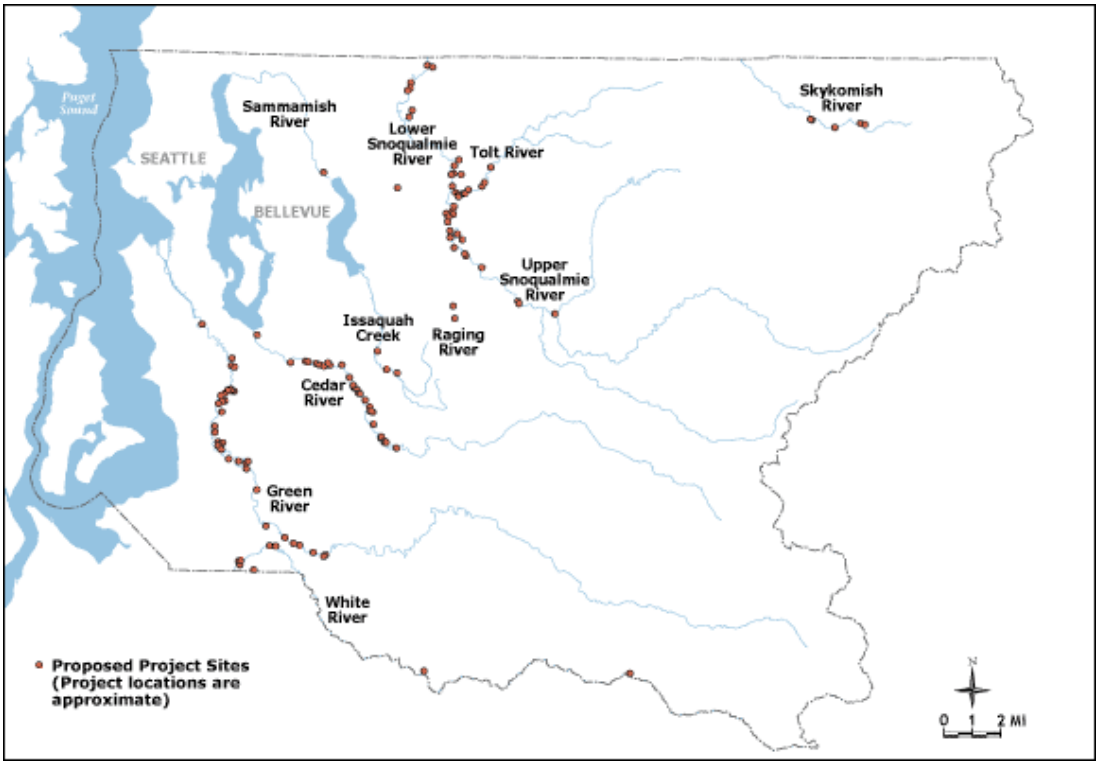
- How to prepare for a flood
- Flood Buyout and Home Elevation Program
- King County Flooding Topics
- Interactive Hazard Areas Map
- Master Recycler Composter

risks.

Results, Target and Outcome Ratings
2006 Results: 3 CRS Rating
2006 target: 3 CRS Rating
2007 target: 2 CRS Rating

The target for this measure is changing from 3 to 2 (lower number being a higher outcome) because of the improved rating of 3 that King County received in 2005.

Data Reference: DNRP's River and Floodplain Management Program (Water and Land Resources Division, Regional Services Section); www.fema.gov/nfip/crs.shtm.



Water and land resources division capital improvement project locations
2005 - 2007
Click on each river name to download a detailed PDF map.

Technical Notes

For definitions and more detail.

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PERFORMANCE MEASURES - 2006 ARCHIVE

REGIONAL TRAIL ACCESS

2006 Rating: ⇔

Residents' proximity to regional trails

2006 results: Residents living within 1-1/2 miles of a connected regional trail: 1,183,065 (of 1,737,034) or 68.1 percent

Residents living farther than 1-1/2 miles of a connected regional trail: 553969 of 1,737,034 or 31.9 percent

2006 target: 69 percent

Influencing factors: Residents' proximity to the Regional Trail System improves when King County and local cities expand the trail system through purchase and conversion of railroad rights-of-way, utility corridors, and via the use of parklands.

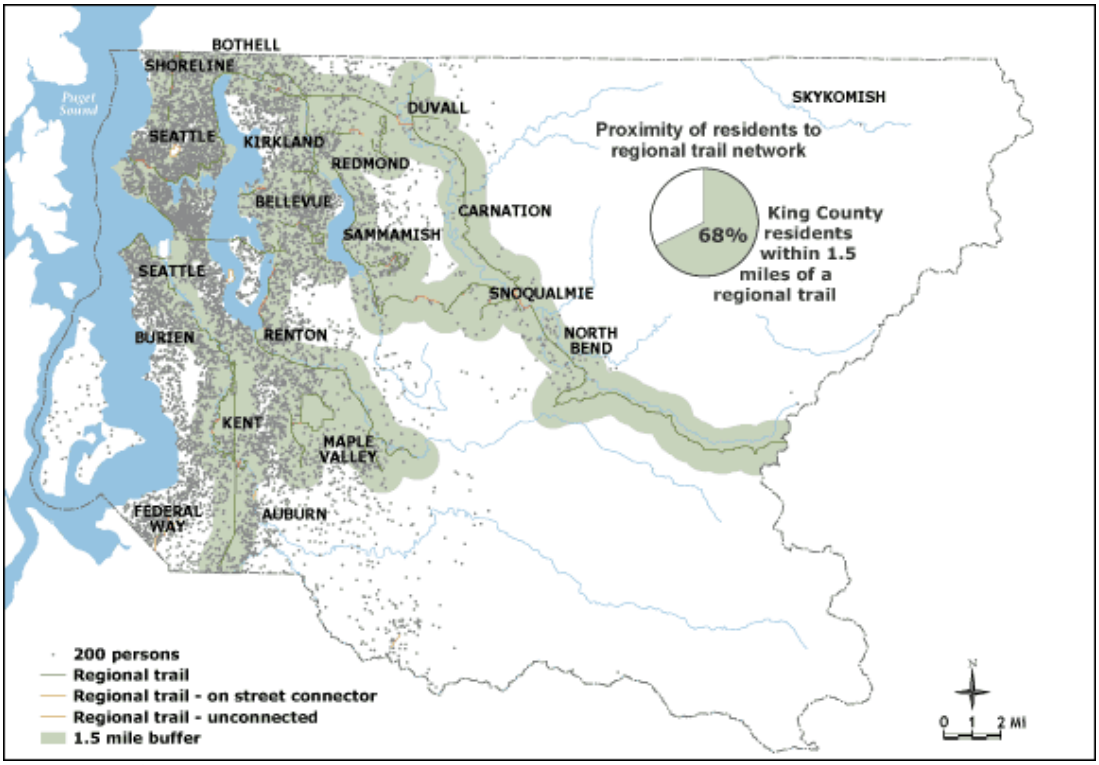
Much of the more easily available and less expensive right-of-ways have been acquired and integrated into the King County Regional Trail System. Often the missing links in the system require expensive elements like bridges over roads and waterways or navigating around sensitive areas such as wetlands.

Continual buildout of the Regional Trail System will occur in both urban and rural locations, enhancing opportunities to conveniently access regional trails. While some portions of the system will be developed in more remote locations, their completion provides greater trail network connections and enhanced mobility regionwide. In addition, the potential acquisition of the Eastside BNSF trail would significantly increase the utility of the Regional Trail System in urban areas.

Strategy going forward: The Parks Division is actively pursuing development of a regionwide trail network while also seeking to include the Eastside BNSF rail corridor as an important component. Collaboration with cities throughout the County on regional trail development has been longstanding and continues.

Related Information

- King County Regional Trails
- King County Bike Map
- Walking Maps in King County
- Burlington Northern Rail Line acquisition
- Interactive Parks Map



Proximity of residents to the regional trail network
2006 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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Updated: September 28, 2007

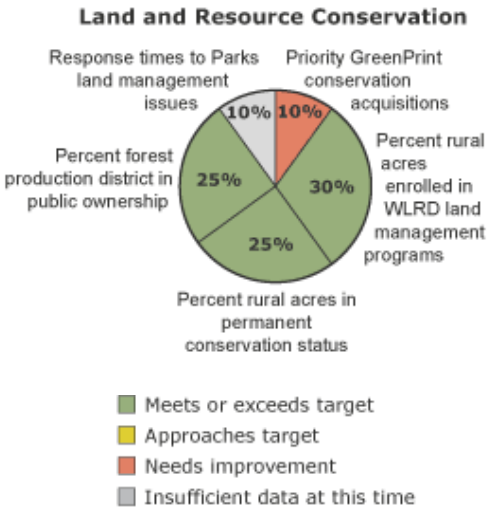
PERFORMANCE MEASURES - 2006 ARCHIVE

LAND AND RESOURCE CONSERVATION

2006 Rating: ↑

Water and Land Resources Division (WLRD)

Conservation of Natural Lands



About this measure: This measure indexes four sub-measures yielding information about the effectiveness of land acquisition, stewardship and incentive programs administered by the Water and Land Resources Division.

This measure combines:

- The percentage of privately owned rural acres with a stewardship plan or that is enrolled in an open space incentive program. This includes farm, forest or rural stewardship plans, or enrollment in the Public Benefit Rating System for timber land, forest and agriculture.
- The percentage of public and private rural acres in permanent conservation. This includes those with conservation easements or land that is owned by a public agency.
- The percentage of total acres acquired by King County in 2006, through both fee simple agreements and easements that are medium-high or high priority lands.
- The percentage of Forest Production District in public ownership through either fee simple agreements or through conservation easements.

For all of these measures, rural acres refer to all rural and agriculture zoned land, including Vashon Island and excluding the Forest Production District.

2006 results:

- Rural acres with stewardship plan or enrolled in open space incentive program: 28.8 percent
- Rural acres in permanent conservation: 21.8 percent
- High to medium-high priority lands acquired in 2006: 45.3 percent
- Forest Production District in public ownership: 80 percent

2006 target:

- Rural acres with stewardship plan or enrolled in open space incentive program: 29 percent
- Rural acres in permanent conservation: 22 percent
- High to medium-high priority lands acquired in 2006: 80 percent
- Forest Production District in public ownership: 80 percent

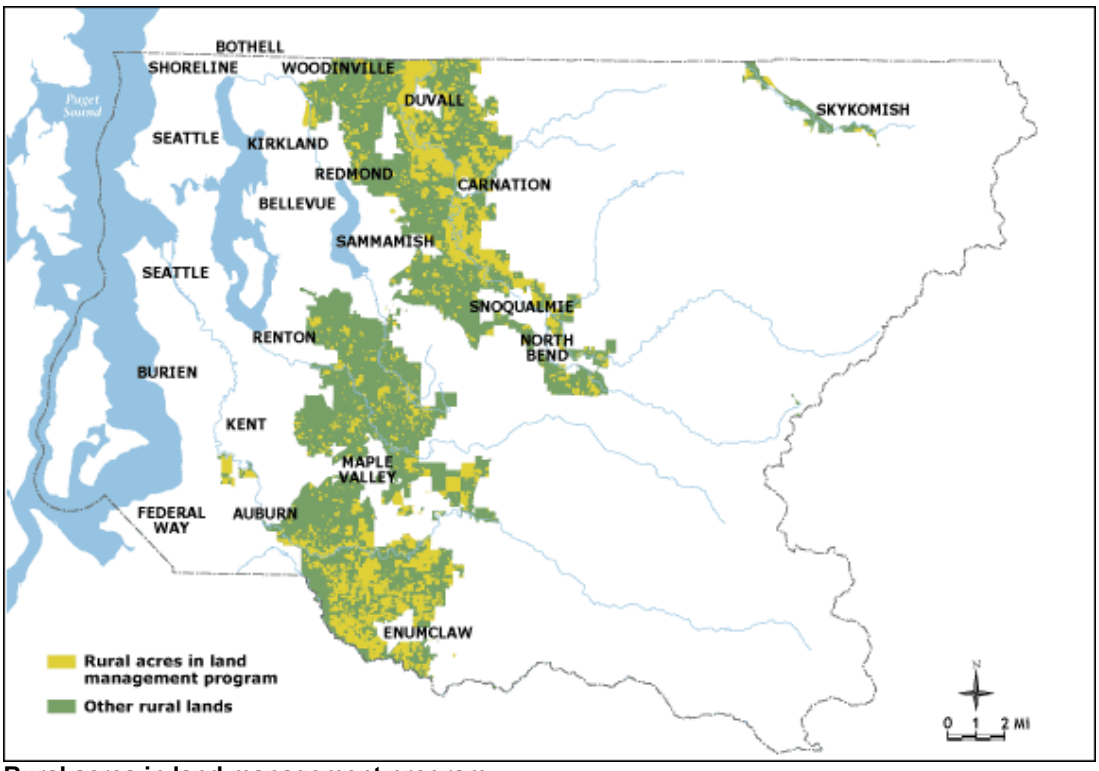
Influencing factors: Budget allocations, regulatory and policy changes all play a role in land conservation and acquisition activities. Implementing policy plans, such as salmon restoration plans or the flood hazard reduction plan, often identify or call for specific land acquisition and protection and outreach and education toward improving stewardship and changing environmental behavior.

Strategy going forward: Continue effective program delivery in encouraging stewardship and

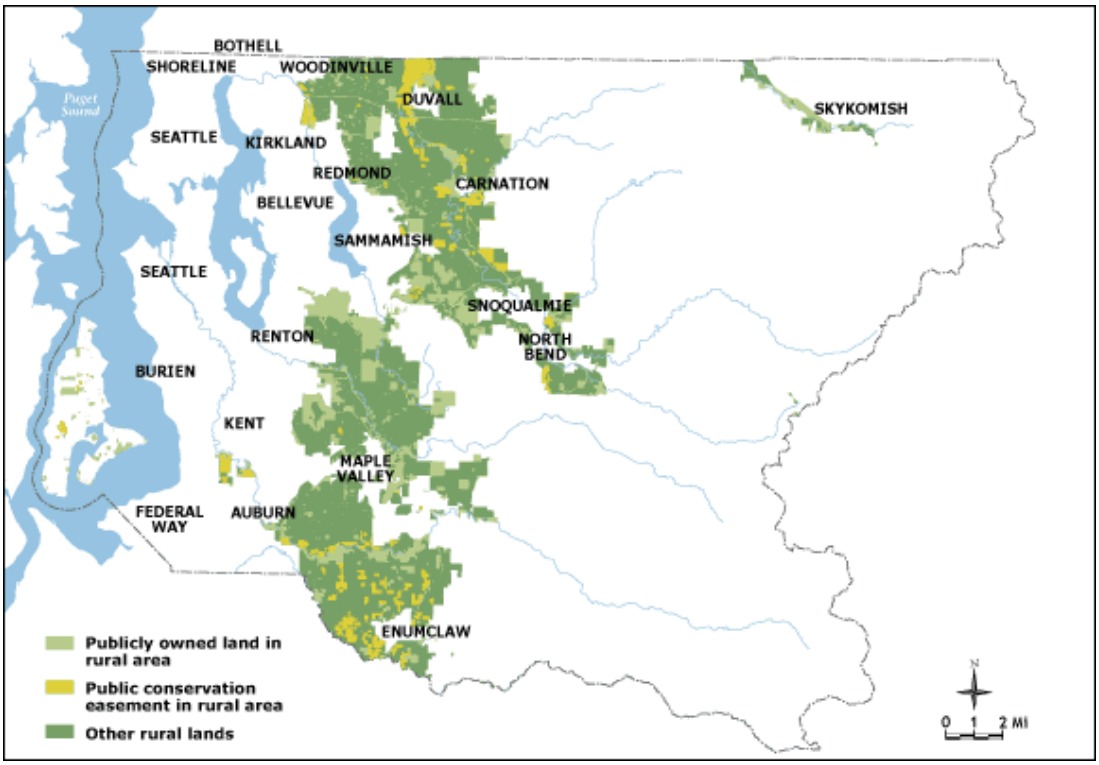
Related Information

- Natural Resource Lands
- Greenprint
- Water and Land Resources Division
- King County Parks & Recreation
- Interactive Parks Map
- Land Management

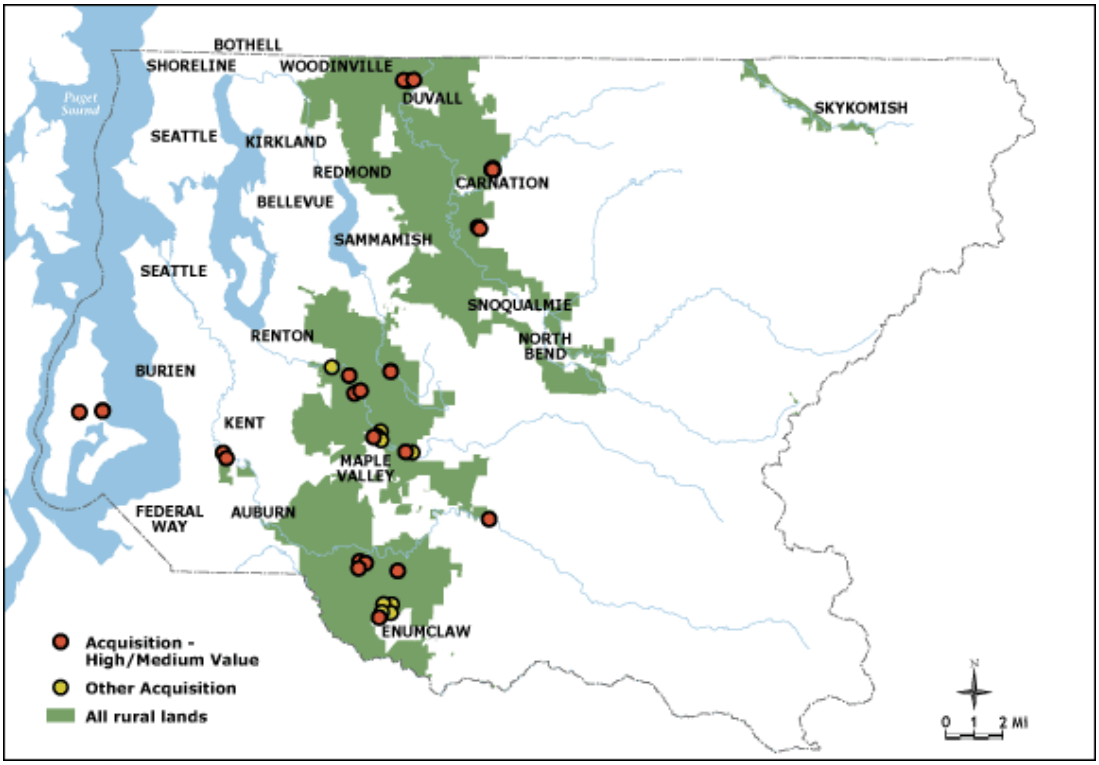
conservation on privately owned lands, and making the case for directing funds toward lands identified as high priority.



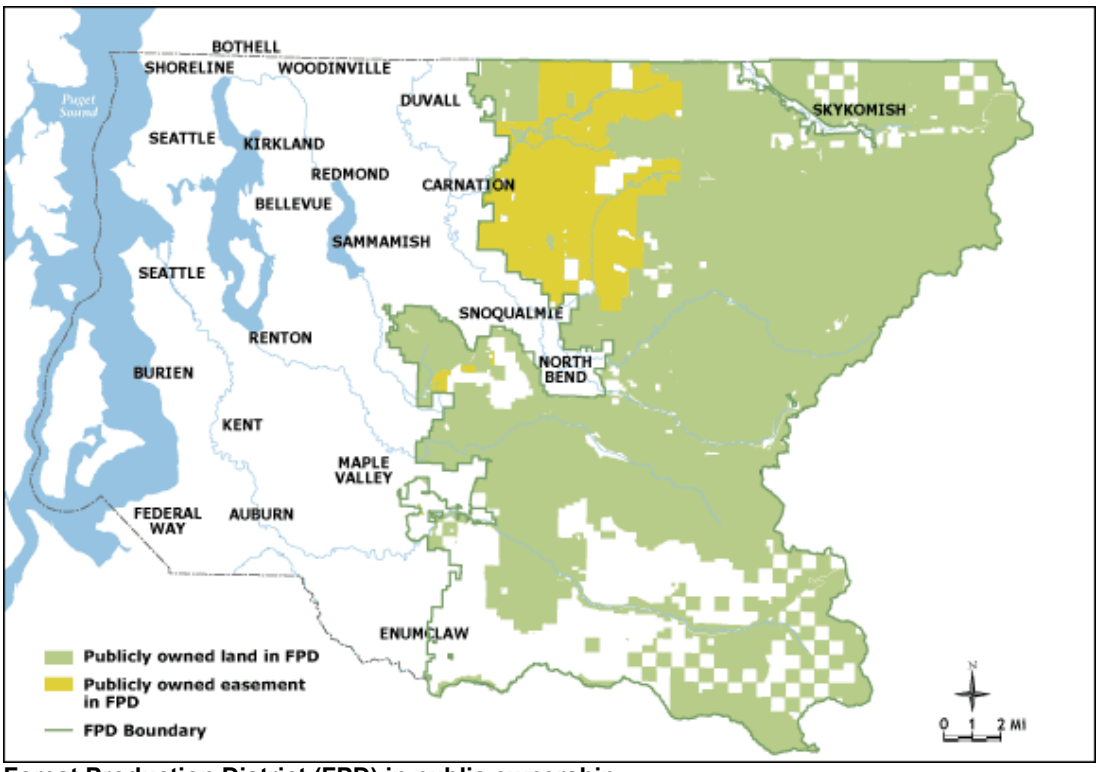
Rural acres in land management program
Click to download the PDF version.



Rural acres in conservation status
Click to download the PDF version.



Priority Greenprint acres acquired
Click to download the PDF version.



Forest Production District (FPD) in public ownership
Click to download the PDF version.

Parks Land Management

About this measure: This measure (in development) will track land management practices for the 25,000 acres of parks and open space managed by the Parks Division. With increasing use of these important regional assets is a commensurate need for maintenance and stewardship of these sites. In addition to general care identified in site management plans, staff often face emerging challenges, such as encampments, noxious weed invasions, and illegally dumped materials. This index will gauge the degree that operational and maintenance targets are met for key open space management objectives.

2006 status: This is a new measure — no data was collected in 2006

2006 target: This new measure had no 2006 target

Influencing factors: In August of 2007 the renewal of the Parks Levy will go before King County voters. The levy's success is the most significant factor that will influence the degree that Parks land management objectives and targets can be met in the years ahead.

Strategy going forward: If the levy passes, Parks will have a dedicated backcountry trail crew and increase volunteer partnerships that help restore natural areas, build new trails, and maintain service levels throughout the Parks system.

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Updated: September 28, 2007

PERFORMANCE MEASURES - 2006 ARCHIVE

FACILITY/PERMIT COMPLIANCE

2006 Rating:

About this measure: This is one of DNRP's highest priority measures, as it shows how DNRP facilities and operations are performing across an array of regulated activities. The performance requirement for transfer stations, landfills, storm and wastewater facilities are complex and important.

DNRP documents the degree regulatory requirements are met or exceeded through a variety of mechanisms, including treatment plant effluents sampling, air emissions monitoring, and on-site inspections and audits. To serve various programs, DNRP has environmental research scientists on staff and maintains an award winning water quality laboratory for analytical support.

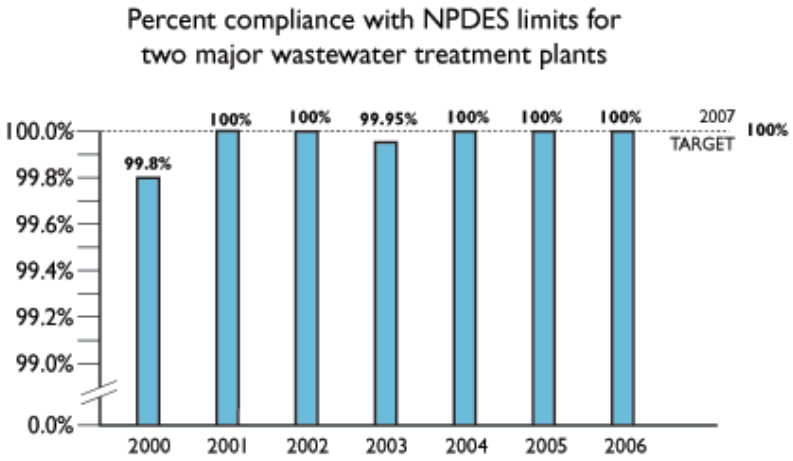
Wastewater Treatment Division (WTD)

WTD facility compliance (NPDES Permits)

About this measure: This measure addresses compliance with National Pollution Discharge Elimination System (NPDES) permit limits for the county's major regional wastewater treatment plants.

2006 results: 100 percent compliance with NPDES permits for the West Point and South treatment plants

2006 target: 100 percent



Influencing factors: The Washington State Department of Ecology issued new NPDES permits to both plants in 2004. South Plant's limits remained the same while West Point's limits included more stringent requirements and some technical reporting changes.

Strategy going forward: All WTD sections contribute strategies to ensure success in NPDES compliance, such as: performing preventive maintenance, providing employees with training and tools, developing asset management plans for major equipment maintenance, and many other

Related Information

Wastewater
Wastewater Treatment Division

South Wastewater Treatment Plant Permit

West Point Wastewater Treatment Plant (Modification) Permit

Solid Waste
Solid Waste Division

Stormwater
Stormwater Topics

Interactive Stormwater Projects Map

Ecology's link to 2007 Municipal Stormwater NPDES Permit

coordinated NPDES compliance efforts across the division.

Solid Waste Division (SWD)

SWD compliance with Public Health - Seattle & King County regulations

About this Measure: Percent of Health Department inspection reports that do not result in a notice of violation for solid waste facilities.

2006 results: 100 percent

Influencing factors: Good results were achieved through efficient operation and maintenance of facilities.

Strategy going forward: Efficient operation and maintenance will continue in 2007.

Graph showing Solid Waste facility compliance with Health Department requirements

SWD compliance with stormwater

About this measure: Percent of stormwater inspections that meet NPDES criteria.

2006 results: 100 percent

Influencing factors: In 2006, staff assignments were reprioritized to better complete inspections. In addition, the Houghton ball field contractor increased its responsiveness in installing and maintaining surface water controls.

Strategy going forward: In 2007, staff will continue to complete inspections in the most efficient manner to ensure a timely response. There are also some planned capital improvements at the Cedar Hills Regional Landfill for 2007 that will improve stormwater quality.

SWD compliance with air quality

About this measure: Percent of air samples taken demonstrating that no landfill gas is released at Cedar Hills through the landfill surface.

2006 results: 100 percent

Influencing factors: Good results were achieved through efficient operation of the landfill gas system and maintenance of the landfill cover system.

Strategy going forward: Efficient operation and maintenance will continue in 2007. In addition, five new vertical gas wells will be installed in 2007 to collect additional landfill gas which will lower the gas pressure and reduce the chance of leaks.

Water and Land Resources Division (WLRD)

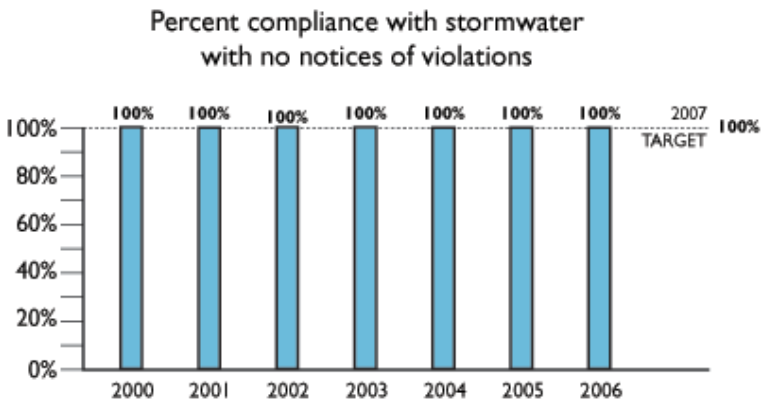
WLRD surface water management permit compliance

2006 results: 100
percent compliance

About this measure: The Washington State Department of Ecology is responsible for administering NPDES permit to ensure compliance with the federal Clean Water Act. Permit negotiations are used with jurisdictions to address the negative impacts of surface or stormwater flows on natural resources. This measure gauges compliance with 16 permit requirements.

Influencing factors: The more developed an area becomes the faster rain or surface waters flow into creeks, streams and rivers. These surface waters carry pollutants that eventually enter water bodies. Both increased flows and dirty water can cause damage to natural habitats, affect water temperature and its chemical composition which can negatively affect fish and wildlife populations.

Strategy going forward: King County's permit for stormwater discharges expired at the end of 2006, and, new permit requirements have been issued in 2007. Requirements are more stringent and compliance with many components are being held to specific timelines. Beginning in 2008, King County will track its compliance in a more detailed manner.



16 Requirements for compliance with SWM NPDES permit:

1. Comprehensive Planning Process
2. Needs and Prioritization
3. Legal Authority
4. Monitoring
5. Fiscal Analysis
6. Background Information
7. Watershed-Wide Coordination
8. New Development, Redevelopment and Construction Site Runoff
9. Control of Runoff from Exiting Residential and Commercial Development
10. Operation and Maintenance of Municipal Stormwater Systems
11. Operation and Maintenance of Roads and Highways
12. Consideration of Water Quality in Flood Management Projects
13. Reduction of Water Pollution from Pesticides, Herbicides and Fertilizers
14. Illicit Discharges
15. Industrial Stormwater Pollution Reduction
16. Public Education

Technical Notes

For definitions and more detail.

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Updated: September 24, 2007

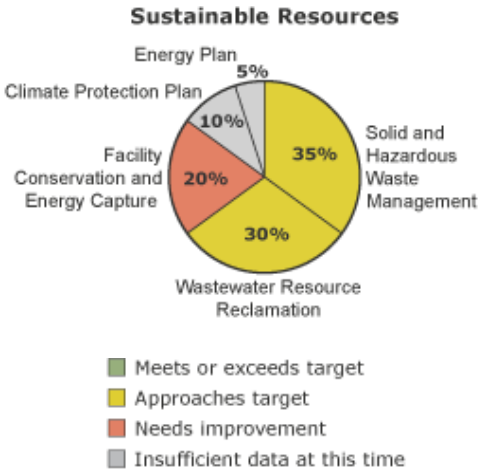
PERFORMANCE MEASURES - 2006 ARCHIVE

SUSTAINABLE RESOURCES MEASURE

2006 Rating: ⇔

This roll-up measure summarizes the degree DNRP is achieving its **Sustainable Resources goal:**

Create resources from waste, reduce emissions and increase the efficiency of facilities and operations.



2006 results

DNRP's rating for the performance measures that support this goal is a **yellow** — signifying results are within 10 percent of target.

Areas under this goal where DNRP performance approaches target:

- Solid and hazardous waste management; and
- Wastewater resource reclamation.

Areas under this goal where DNRP performance needs improvement:

- Facility conservation and energy capture.

Areas under this goal where data is insufficient:

- Climate protection (a plan was recently developed); and
- Energy plan (a plan was recently developed).

Key influencing factors

For many years, DNRP divisions and programs have been aggressively researching, analyzing and adopting appropriate technologies for harvesting resources from wastewater and solid waste streams. Successful implementation of these approaches often requires cooperative behavior changes of residents and businesses.

Reducing solid waste disposal and improving recycling rates require individual and institutional behavior changes, while an industrial pre-treatment program helps businesses reduce pollutants that, left untreated, would enter the wastewater treatment stream.

Aging equipment has limited the ability of the Wastewater Treatment Division to convert biogas collected from the wastewater treatment process, while system development challenges have slowed the implementation of technology to convert landfill methane into a usable energy.

The insufficient data on the climate protection and energy plans is a factor of timing. Comprehensive plans were completed and adopted late in 2006 and implementation is just getting under way.

Strategies going forward

Related Information

- What do I do With...?
- Solid Waste Recycling
- Garage & Yard Sales
- Household Online Materials Exchange
- Industrial Materials Exchange
- Solid Waste Business Services
- Hazardous Waste Disposal
- Water Supply in King County
- WTD Reclaimed Water Program
- Biosolids
- EQ Environmental Quiz

The completion of the Brightwater Treatment Plant in 2010 will significantly increase available volumes of reclaimed water. New regulations, incentive programs and outreach efforts are helping ensure that the wastewater treatment program can increase its production of resources from wastewater.

A contractor is working on plans to convert landfill gas that is currently burned off into a usable energy source. Upcoming efforts to improve recycling rates and reduce the amount of solid waste that comes to King County's Cedar Hills Regional Landfill include policy changes, outreach and education and improvements in solid waste management facilities.

DNRP is developing a resource management database to improve the tracking and analysis of resource consumption at its facilities. This application, which will be completed soon, will highlight opportunities to improve efficiencies. The Green Building team is rolling out the GreenTools Web site to better support county project managers who seek to achieve LEED certification for their project.

Teams are in place to ensure coordinated implementation of King County's inter-related Climate Protection and Energy plans. An assessment of operational greenhouse gas emissions required for King County's participation in the Chicago Climate Exchange is helping staff identify opportunities for reducing energy use and greenhouse gas emissions.

More information about King County's Solid/Hazardous Waste Mgt, Wastewater Resource Reclamation, Facility Conservation, Energy Plan, and Climate Protection is available by continuing to the pages for these performance measures:

- Solid/Hazardous Waste Mgt
- Wastewater Resource Reclamation
- Facility Conservation
- Energy Plan
- Climate Protection

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Updated: September 28, 2007

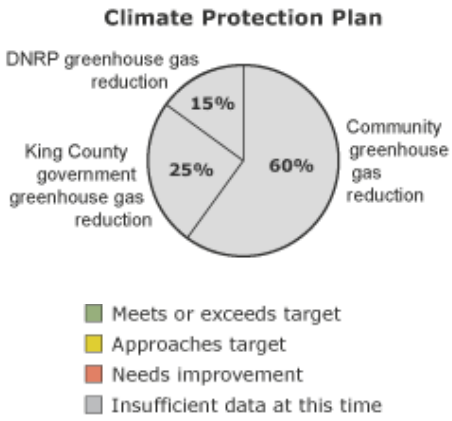
PERFORMANCE MEASURES - 2006 ARCHIVE

CLIMATE PROTECTION

2006 Rating:

About this measure: The King County Climate Plan is the initial response to the Executive Orders on Global Warming Preparedness and King County Council Ordinance 12362. This plan provides an overview of how King County seeks to reduce greenhouse gas (GHG) emissions and work to anticipate and adapt to climate change impacts.

This performance measure addresses the degree that King County achieves its GHG emissions reduction targets and the degree that progress is being made in the related areas of climate-friendly transportation, clean fuels, clean energy, energy efficiency, land use, building design and infrastructure.



The King County Climate Plan addresses Greenhouse Gas (GHG) reduction targets both for King County government operations and for the community — all of the households and businesses in geographic King County.

This plan also includes strategies for adapting to the impacts of climate change. Adaptation steps account for and respond to the increase in temperature, droughts, floods and loss of snow pack and will be integrated into capital project designs and included in facility and program operations.

2006 results: As this plan is in the process of being adopted, it is too early to report on progress.
2006 target: None

Influencing factors

County operations: Factors that will affect the rate at which King County's gov't GHG emissions drop include:

- incorporation of technologies for reducing vehicle emissions, landfill emissions and building-related emissions
- readiness to adopt emission-reducing technologies (e.g: use of renewable energy)
- speed at which energy efficiency and non-fossil technologies can be integrated into county operations

Community-wide emissions: Factors that will affect the rate at which community emissions (those of households and businesses will decline include:

- availability and adoption rates of energy efficiency and renewable energy technologies
- adjustments in market signals (incentives and penalties) which drive consumer behaviors

Strategy going forward: Progress on this plan will require significant both cross-departmental and cross-sector collaboration.

County operations: For King County government operations, the primary GHG reductions are identified in the global warming Executive Orders and the King County Energy Plan. These primary goals are a 50 percent incorporation of energy efficiency and renewable for all stationary energy

Related Information

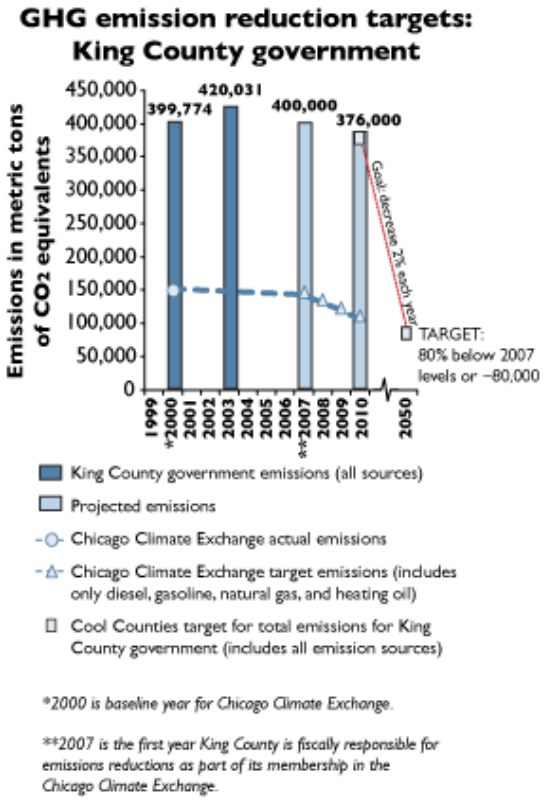
Global Warming Action Plan

Executive's Global Warming site

King County Climate Change Conference results

sources (mostly electricity and natural gas heating) by 2012, and a 50 percent incorporation of energy efficiency and renewable fuels for all mobile sources. In addition to these energy goals, the other major source of GHG emission reductions is uncaptured methane from the Cedar Hills landfills and the other historic landfills. No additional action is needed for these sources because their methane production rate will significantly reduce over time. Between the energy goals and the reduction of landfill emissions, King County should be able to cut its government operations emissions by 30 to 50 percent by 2020.

Community-wide emissions: For King County geographic emissions, the primary source of GHG emissions is from transportation. King County cannot achieve regional reductions on its own so it is closely collaborating with its cities, the Puget Sound Clean Air Agency, the Puget Sound Regional Council, and other public as well as private partners. The reductions in transportation emissions will come from massive improvements in vehicles efficiencies, incorporation of renewable fuels, and major mode shift is travel behavior and continued emphasis on smart growth and denser development.



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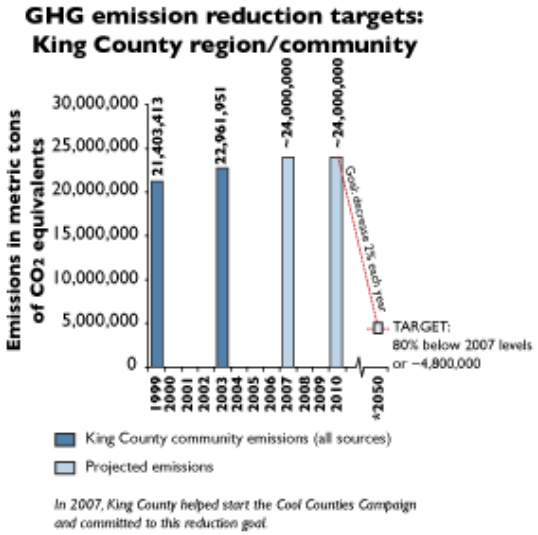

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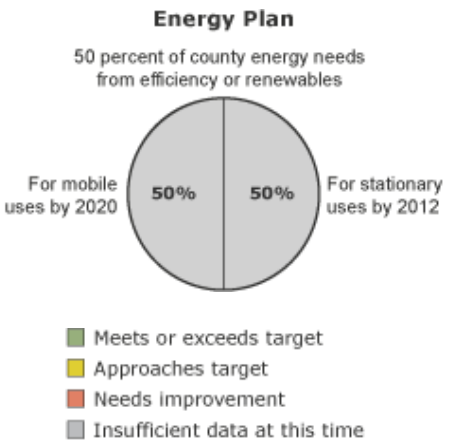
PERFORMANCE MEASURES - 2006 ARCHIVE

ENERGY PLAN

2006 Rating:

About this measure: King County Executive Ron Sims issued an Executive Order in 2006 which established renewable energy use requirements for King County government operations and directed the development of a plan to meet these requirements. The plan was finalized in February 2007 and forwarded to council at that time for their review.



The renewable energy order requires that:

- 50% of King County's non-transit energy come from renewable sources by 2012
- 35% of King County's transit energy use come from efficiencies and renewables by 2015
- 50% of King County's transit energy use come from efficiencies and renewables by 2020

The goals of the Energy Plan are as follows:

- King County will be a leader in the use of climate-friendly renewable energy sources
- King County will maximize the conversion of waste-to-energy
- King County will become a national model for energy efficiency by achieving a 10% per square foot reduction in county energy use by 2012

2006 results: As this plan was recently adopted and the actions just being initiated, it is too early to report on progress.
2006 target: None

Influencing factors: Several factors will affect the degree that energy plan goals and targets are met, including:

- availability of seed money to conduct efficiency upgrades
- the existing condition and improvement potential of King County building stock
- availability of grant funding, and
- participation and buy in from KC staff and management

Strategy going forward: King County has mapped a comprehensive strategy for achieving energy plan goals and targets, the major elements of which include:

- Implement utility accounting management software
- Conduct and/or update efficiency audits in all county buildings
- Develop energy management plans for energy intensive special-purpose facilities
- Pursue utility grant funding
- Seek achievement of LEED in new county building construction, and
- Allow portion of energy cost savings to be retained by the applicable county department

Related Information

- Global Warming Action Plan
- Executive's Global Warming site
- King County Climate Change Conference results

Technical Notes

For definitions and more detail.

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Updated: September 28, 2007

PERFORMANCE MEASURES - 2006 ARCHIVE

FACILITY CONSERVATION

2006 Rating:

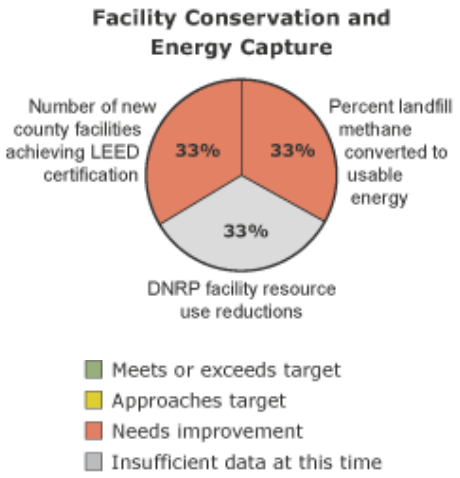
Solid Waste Division (SWD)

Percent of methane produced by Cedar Hills Regional Landfill that is converted to useable energy.

2006 results: 0 Percent

Influencing factors: Changes in local energy markets resulted in the need to amend the vendor contract, which delayed the project.

Strategy going forward: The new contract will be reviewed by the Metropolitan King County Council in early 2007. The new strategy for the project is to "scrub" the methane gas so that it is clean enough to be sold into the natural gas network.



Number of King County government buildings achieving any level of Leadership in Energy and Environmental Design (LEED) rating

About This Performance Measure: This measure represents the number of commercial buildings being built by King County government that meet certain environmental standards. The standard being used is the national Leadership in Energy and Environmental Design (LEED)™ rating system. The U.S. Green Building Council (USGBC) developed the LEED™ rating system to provide a benchmark for the design, construction and operation of high performance commercial green buildings. LEED™ recognizes performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

2006 results: 0.

Influencing factors: Some County buildings that could qualify for LEED™ certification have not gone through the certification process. The King County Green Building ordinance states that buildings must get certified if it is within budget to do so. As material and labor costs have increased, LEED™ certification has not been pursued for every eligible project. In addition, it takes several years for a project to go from registration to completion to certification, thus projects registered in one year will be certified several years later. No projects were certified in 2006, however, there were several registered projects working toward certification in 2006.

Strategy going forward: SWD will continue to provide LEED information and training to King County project managers in 2007, including hosting a King County Green Building Summit.

Department Natural Resources and Parks (DNRP)

Facility Resource Conservation

About This Performance Measure: This suite of measures looks at the degree targets are met for

Related Information

Solid Waste Division Green Building Initiative

Leadership in Energy and Environmental Design (LEED™)

reductions in facility energy and water use, and solid waste generation.

The utility management database, currently being developed by DNRP's Resource Conservation Manager, will be the source of this facility resource consumption information. The findings will help inform priorities for various efficiency investments at DNRP facilities.

2006 results:	Baseline information on DNRP facility energy and water consumption and solid waste generation are just being collected and consolidated. No results are available at this time.
2006 targets:	There were no targets for 2006. Targets for future years will seek improvement from baselines and will be calibrated based on potential savings from both operational changes and capital improvement efforts.

Influencing Factors:

Factors that will influence DNRP's ability to achieve performance targets include:

- Condition of existing buildings and facilities
- Buy-in and participation of staff
- Communication between DNRP Resource Conservation Manager and facility operators and maintenance folks
- Availability of utility incentive support

Strategy Going Forward:

- Conduct and/or update efficiency audits in all county buildings
- Develop energy management plans for energy intensive special-purpose facilities
- Pursue utility grant funding
- Seek achievement of LEED in new county building construction

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Updated: September 28, 2007

PERFORMANCE MEASURES - 2006 ARCHIVE

WASTEWATER RESOURCE RECLAMATION

2006 Rating: ⇔

Wastewater Treatment Division (WTD)

Reclaimed water volumes met

2006 results: 259 Million Gallons (MG)
2006 target: 260 MG

This measure tracks the amount of wastewater that DNRP converts into a resource — reclaimed water. In the long term, DNRP's success in converting wastewater into a resource will depend on the cost of providing treatment and conveyance for reclaimed water relative to the cost of using existing sources and/or providing new sources of surface and groundwater. Factors include more stringent wastewater discharge requirements, closer scrutiny of water rights, more integrated water supply and wastewater planning, and the need to provide water and habitat for salmon recovery.

In the short term, higher costs and the abundance of other, lower-cost supplies, have resulted in low demand for reclaimed water from outside customers. However, both WTD treatment plants continue to reclaim all water needed for their own operations and any needed by customers.

The total volume of water reclaimed declined from 265 MG in 2005 to 259 MG in 2006. Reclaimed water at South Plant was turned off for several days in December to support a Brightwater pipe-cleaning test.

DNRP's goal is to expand the use of reclaimed water where feasible, and produce reclaimed water to match any increase in demand. DNRP will be developing a regional water supply plan that will address the role of reclaimed water in meeting the region's diverse water supply needs.

Biosolids reuse targets met

2006 results: 100 percent
2006 target: 100 percent

This measure represents WTD's ability to produce biosolids, a nutrient-rich organic material produced by treating wastewater solids. King County produces biosolids that meet high regulatory standards and to maintain customers and contracts for biosolids by addressing public perception issues that might affect these markets. The Regional Wastewater Services Plan states "King County shall strive to achieve beneficial use of wastewater solids." Several projects are under way at the treatment plants to improve biosolids quality and reduce digester problems that will help us maintain a target of 100 percent reuse of biosolids. Although 100 percent of available biosolids were reused, the measure requires ongoing attention to ensure this high rate.

WTD's strategy for continuing to meet the target of 100 percent biosolids reuse has several components. To maintain public and customer confidence in biosolids quality and management, King

Related Information

Water Supply in King County

WTD Reclaimed Water Program

Biosolids

County now operates under and Environmental Management System for biosolids, which was nationally certified in 2004. Other strategies include:

- Ensuring availability of reuse sites for 150 percent of biosolids production.
- Continuing an aggressive industrial pretreatment program to maintain current low metals levels.
- Maintaining an active research and demonstration program that responds to public concerns and identifies potential new uses for biosolids.
- Investigating Class A technologies and determining which ones would be most appropriate and cost-effective for the West Point and South Plant facilities.

Percentage of biogas from wastewater converted to energy

2006 results: 73 percent
2006 target: 75 percent

This measure presents the average amount of biogas utilized at the West Point and South Plant wastewater treatment plants as renewable energy. Biogas, a natural byproduct of the wastewater treatment process, consists of methane (a greenhouse gas) and carbon dioxide. Rather than allowing biogas to be lost to the environment as a waste or pollutant, it can be captured, processed and burned as a renewable energy resource for fuel cell and cogeneration units to provide energy to the treatment plants.

The overall percent of biogas being recycled at the two treatment plants has declined over the past three years due to difficulties with the aging cogeneration facilities at West Point. New cogeneration and fuel cell facilities at South Plant came on line in 2005, however these facilities are not expected to significantly change the percentage recovery achievable at South Plant. Instead, these facilities will be used to generate backup energy for use at the plant.

New cogeneration facilities will come online at West Point in 2007 which will allow greater utilization of the available digester gas. A higher target of 85 percent utilization has been set for 2007.

Technical Notes

For definitions and more detail.

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PERFORMANCE MEASURES - 2006 ARCHIVE

SOLID/HAZARDOUS WASTE MANAGEMENT

2006 Rating: ⇔

Solid Waste Division (SWD)

Pounds of solid waste disposed per employee per week countywide

2006 results: 25.6 pounds per week

Influencing factors: A growing economy in 2006 resulted in an increase in the number of employees in the county. However, since the growth was in the less waste-intensive service industries, the average pounds per week per employee was reduced in 2006.

Strategy going forward: The strategy for 2007 is for SWD to work with cities to increase recycling services in the non-residential sector.

Percent of single-family curbside solid waste stream that is recycled

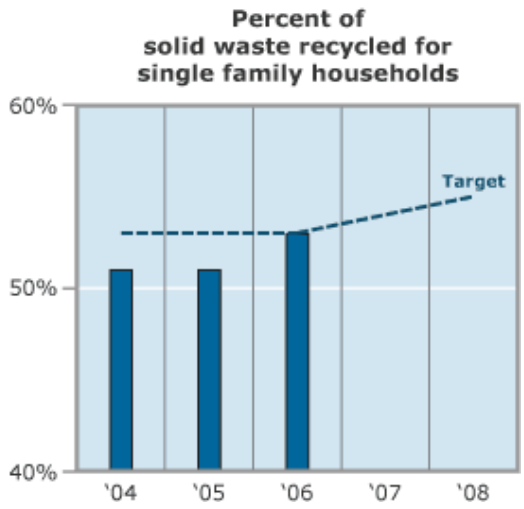
2006 results: 53 percent

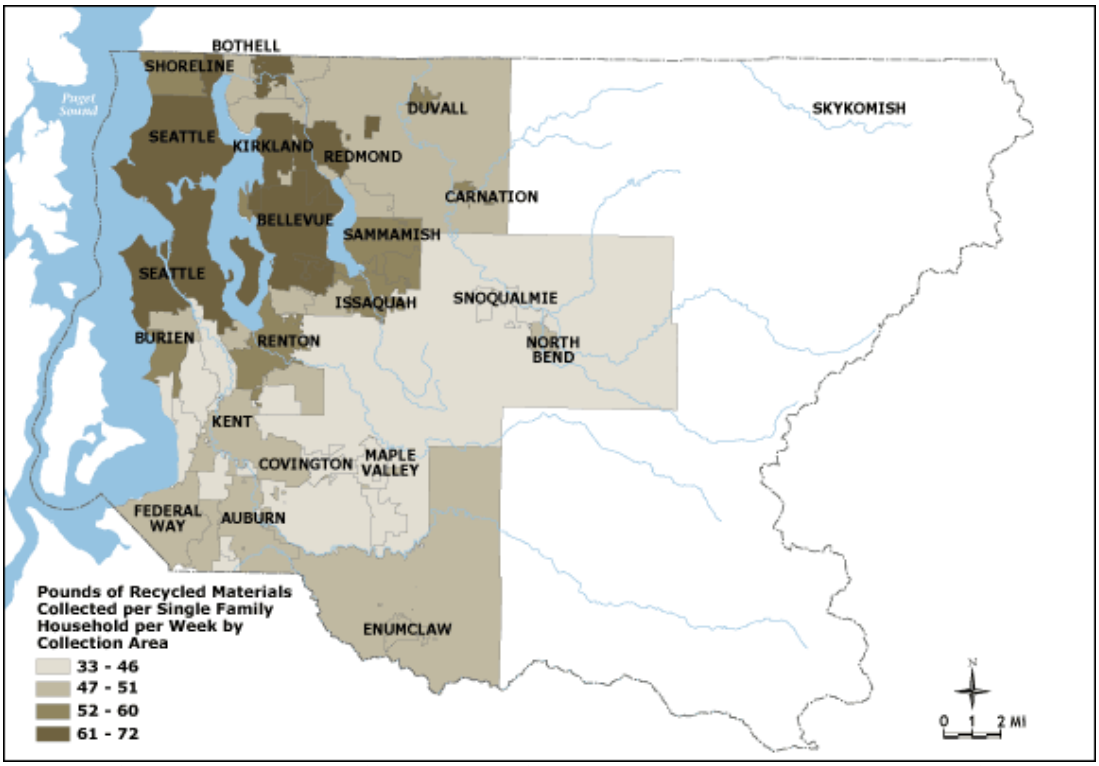
Influencing factors: King County Solid Waste Division (SWD) worked closely with cities to increase the availability of food waste recycling services. The Division also launched the "Recycle More. It's Easy to Do" media campaign which resulted in increased demand for recycling carts.

Strategy going forward: These efforts will continue in 2007.

Related Information

- What do I do With...?
- Solid Waste Recycling
- Garage & Yard Sales
- Household Online Materials Exchange
- Industrial Materials Exchange
- Solid Waste Business Services
- Hazardous Waste Disposal
- EQ Environmental Quiz





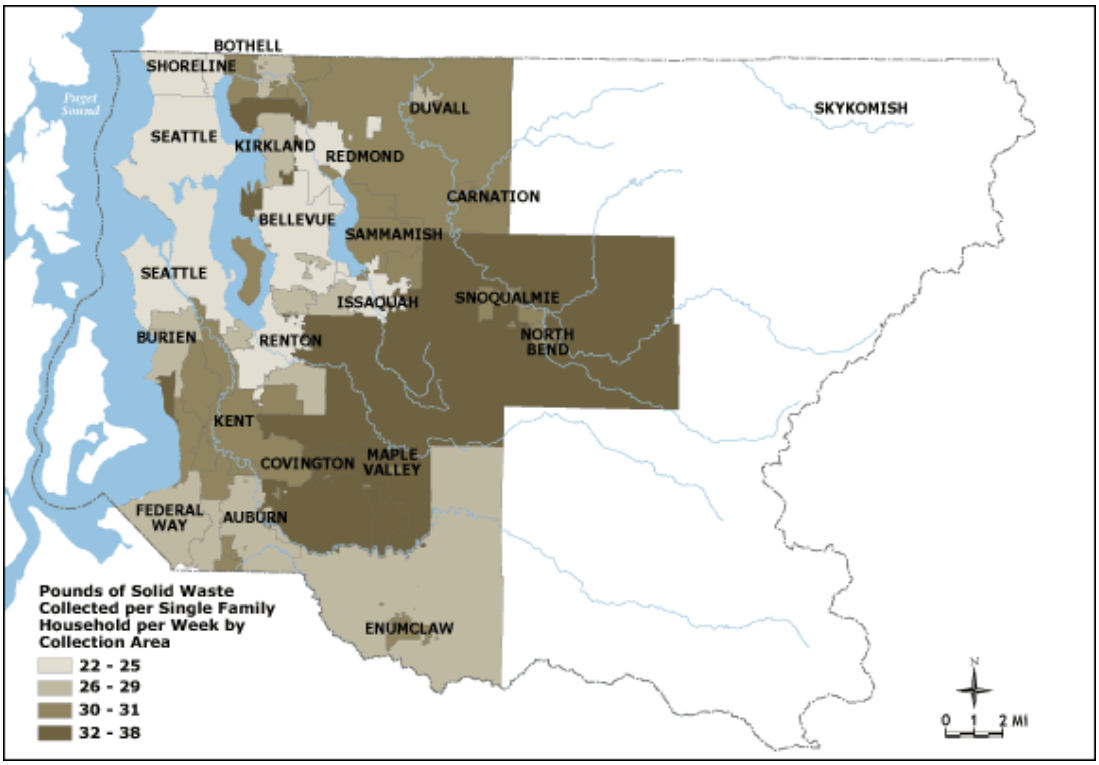
Pounds of Recycled Materials Collected per Single Family Household per Week by Collection Area
2006 Information
Click to download the PDF version.

Pounds of solid waste disposed per single family household per week

2006 results: 28 pounds per week

Influencing factors: King County Solid Waste Division worked closely with cities to increase the availability of food waste recycling services. The division also launched the "Recycle More. It's Easy to Do" media campaign which resulted in increased demand for recycling carts.

Strategy going forward: These efforts will continue in 2007.



Pounds of Solid Waste Collected per Single Family Household per Week by Collection Area
2006 Information
Click to download the PDF version.

Residents' recycling and disposal behavior via EBI

About this measure: The King County Environmental Behavior Index (EBI) tracks and reports on the adoption of selected environmental behaviors of King County residents. In 2004 and again in 2006, 1000 randomly selected respondents in King County participated in a telephone survey and reported on their household's behaviors related to:

- Yard Care
- Recycling And Disposal
- Environmentally Friendly Purchasing

Understanding residents' awareness and behavior guides a more cost-effective targeting of outreach efforts and helps evaluate whether the efforts to improve these behaviors are making a difference.

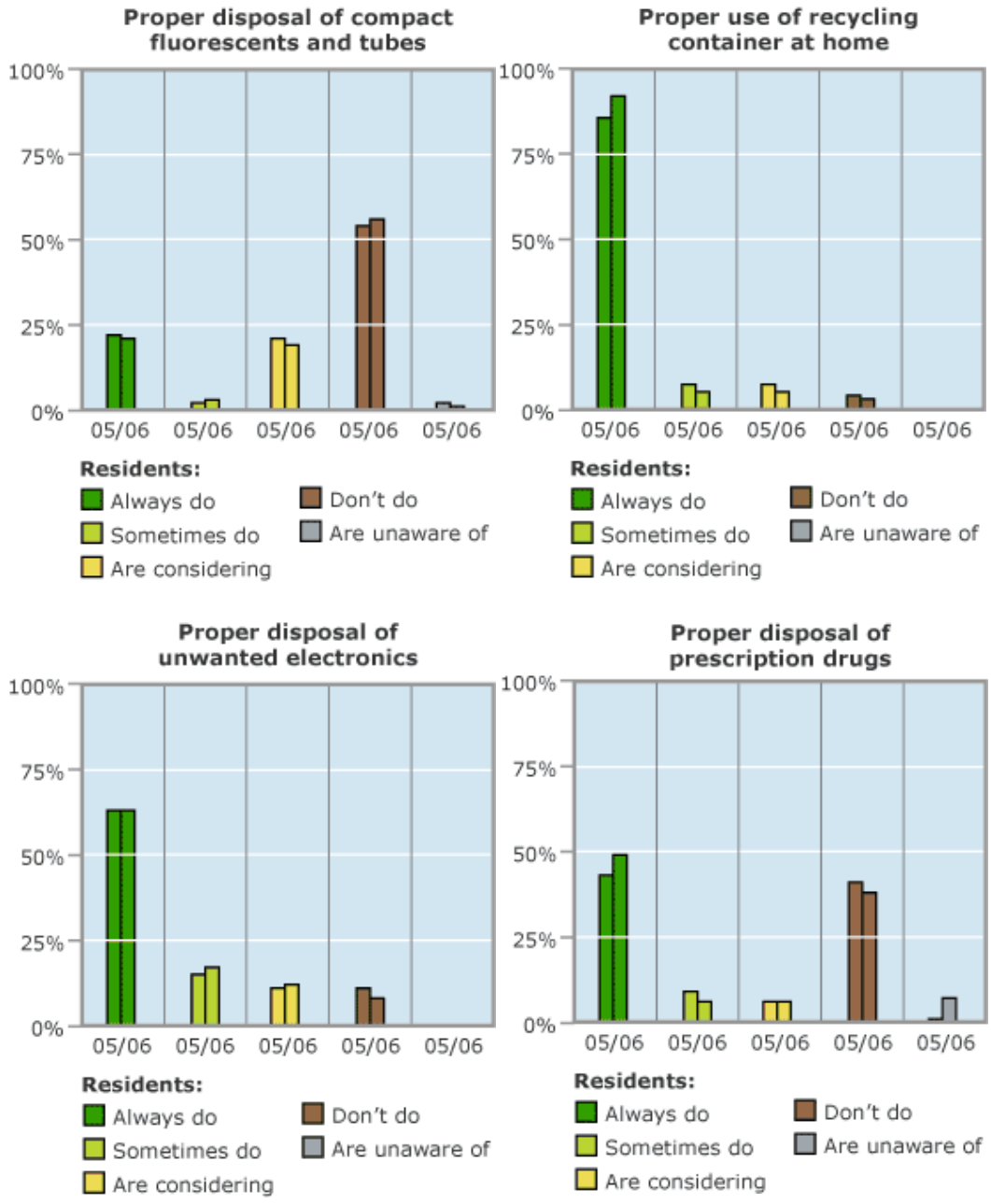
The 2006 Environmental Behavior Index was conducted in spring of 2006. The findings about yard care and purchasing behavior can be found under the performance measure on solid and hazardous waste management, which is here.

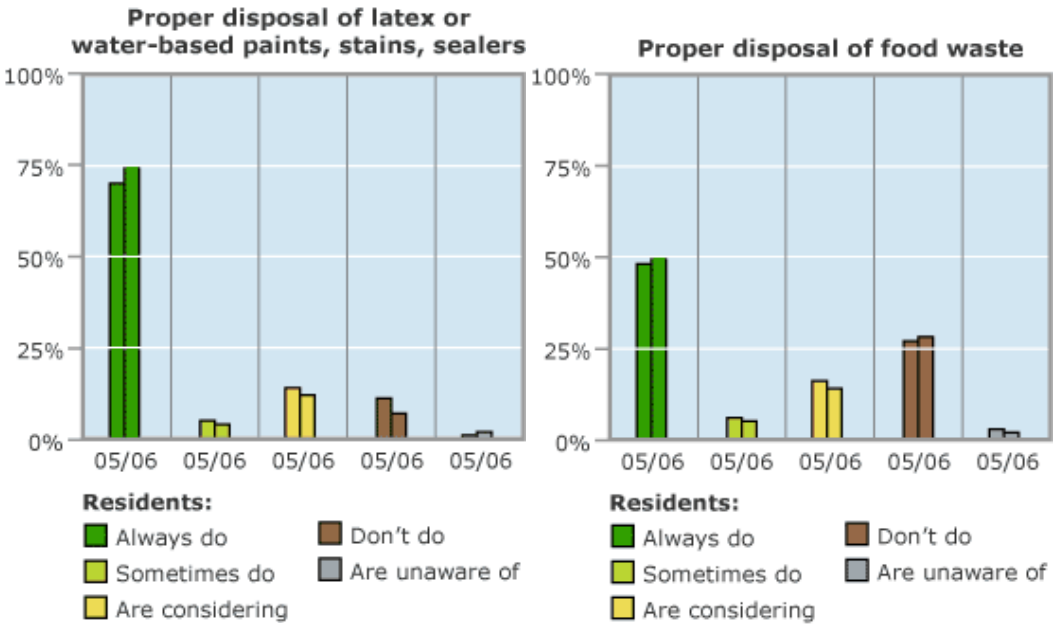
Below are details on findings for residential recycling and disposal behaviors.

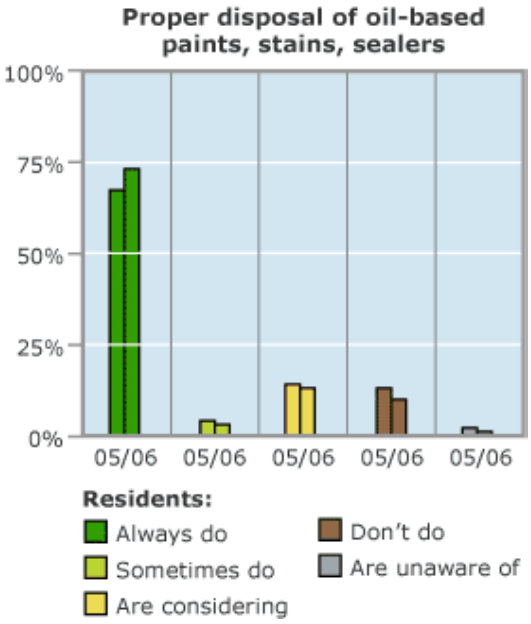
2006 results: The 2006 survey of residents' recycling and disposal behaviors indicates that use of recycle containers at home is high and improving, as is proper disposal of paints, kitchen grease and prescription drugs. Proper disposal of compact fluorescent light and tubes is low and is slightly declining.

Influencing factors: In 2006, the Seattle City Council passed an ordinance making it illegal and punishable by fine to put selected recyclables in the garbage. There was significant media coverage of this new legislation, which likely influenced both awareness and behavior of residents throughout King County.

Strategy going forward: SWD will continue to work with cities to allow food waste recycling with yard debris. The SWD is partnering on a recycling education campaign, "Recycle More, Its Easy to Do" and is making further improvements to its Web site about general and food waste recycling.







Seattle - King County Local Hazardous Waste Program

Hazardous Waste Risk Reduced Through Program Participation

About this measure: For this measure it is assumed that risks to people and the environment from hazardous chemicals and wastes are reduced as program activities are implemented.

This measure is an index of performance of key elements of the Local Hazardous Waste Management Program. The target is set for each key program element — either for meeting a specific number of work plan components or for progress toward an outcome that is anticipated farther in the future.

The index is comprised of five indicators, each contributing 20 percent toward the overall score:

Waste pharmaceuticals project

Full implementation of the largest pilot collection project in the United States

2006 results: Seven operational collection sites, which achieves 100 percent of the target
2007 target: 30 operational collection sites
2008 target: 60 operational collection sites

Nail salon English-as-a-second language business project

The purpose of this project is to work with nail salon workers for whom English is a second language to reduce exposure to hazardous chemicals.

2006 results: Program developed and fully operational, which by end of 2006 was met in full.
2007 target: Develop draft "best management practices" document for nail salons
2008 target: Best management practices are implemented by 35 nail salon businesses.

Healthy schools project

The focus of this project is to reduce or eliminate exposures to key hazardous chemicals in all King County schools

2006 results: Develop and begin operating program, which by end of 2006 was met in full.
2007 target: Remove elemental (bulk) mercury from half of all King County schools.
2008 target: Complete the removal of all remaining elemental mercury from 100 percent of King County schools, and remove lead glazes from half of all King County schools.
2009 target: Complete the removal of all remaining lead glazes from all King County schools.

Low-income governmental housing

The aim of this project is to reduce exposures to key hazardous chemicals found in public housing within King County.

2006 results: Make initial contacts and develop program, which by end of 2006 was met in full.
2007 target: Reach agreement with all three public housing authorities to eliminate and properly dispose of all mercury-containing thermostats.
2008 target: Reach agreement with all three public housing authorities to reduce use of pesticides.

Flood hazard zones

This project aims to prevent the release of hazardous chemicals in the event of major river flooding in King County.

2006 results: Develop and begin operation of the plan, which by end of 2006 was met in full.
2007 target: Draft best management practices for storage and use of hazardous materials in flood zones.
2008 target: Incorporate best management practices into the codes of five cities located within flood zones, and confirm that 30 businesses located within flood zones are implementing the best management practices.

Influencing factors:

Strategy going forward:

Technical Notes

For definitions and more detail.

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Updated: September 28, 2007

PERFORMANCE MEASURES - 2006 ARCHIVE

PRODUCTIVE PARTNERSHIPS MEASURE

2006 Rating: ⇔

This roll-up measure summarizes the degree DNRP is achieving its **Productive Partnerships goal:**

Collaborate with partners throughout the region to achieve improved environmental and community outcomes.

2006 results

DNRP's rating for the performance measures that support this goal is a **yellow** — signifying results are within 10 percent of target.

Areas under this goal where DNRP performed well:

- Supporting green building practices in the private sector.

Areas under this goal where DNRP performance approaches target:

- Partnership with cities and other jurisdictions;
- Customer satisfaction;
- Volunteering; and
- Residents' stewardship levels.

Areas under this goal where data is insufficient:

- Recreational opportunities via community partnerships.

Key influencing factors

Because DNRP is only one of many entities with influence over King County's environmental quality, collaborating with partners is essential to the department's mission. Additional city incorporations and annexations elevate the role of cities in protecting and enhancing the region's natural resources.

Cities, tribes, water and sewer districts and other jurisdictions helped drive the completion of watershed plans to guide and inform salmon recovery efforts. Cities are actively engaged in the update of the King County Solid Waste Management Comprehensive Plan and are partners in wastewater planning.

King County residents' stewardship activities are influenced by a host of economic and cultural factors, some of which DNRP can influence through policies, incentives, outreach and education, while others are driven by national policies and broader social trends.

Success of any volunteer stewardship program depends on having the staff necessary to coordinate and guide volunteer contributions. Demographic trends also influence volunteer stewardship activities. As our population ages, there are increased numbers of retirees, many who have the physical ability and drive to contribute to improvements in their community's natural resources.

Related Information

Natural Resource Lands

Greenprint

Water and Land Resources Division

King County Parks & Recreation

Interactive Parks Map

Strategies going forward

DNRP will expand and intensify its collaboration with partners in upcoming years. A few priority areas include:

- Further engaging with landowners on agricultural and forestry land conservation;
- Expanding partnerships with community groups on recreation service delivery;
- Working with cities on developing solid waste management and recycling programs; and
- Collaborating with a host of landowners, non-profit groups and public-sector entities on efforts to restore salmon and Puget Sound.

On the Enumclaw Plateau, DNRP will continue its partnership with local dairy farmers, the King Conservation District and the U.S. Department of Agriculture to plan a collection and centralized manure digester. If successful, the system would collect and treat nutrient-rich cow manure from dairies, creating a new energy source, and an improved fertilizer source and protecting air and water quality on the Plateau.

Volunteer programs will be expanded as resources allow to further engage residents in stewardship activities.

The Green Building Team will increase its collaboration with the Master Building Association of King and Snohomish counties and others to increase development of BuiltGreen certified homes.

More information about King County's City Partnerships, Recreation Partnerships, Volunteerism, Residents Stewardship, Customer Satisfaction, and Green Building is available by continuing to the pages for these measures:

- City Partnerships
- Recreation Partnerships
- Volunteerism
- Residents Stewardship
- Customer Satisfaction
- Green Building

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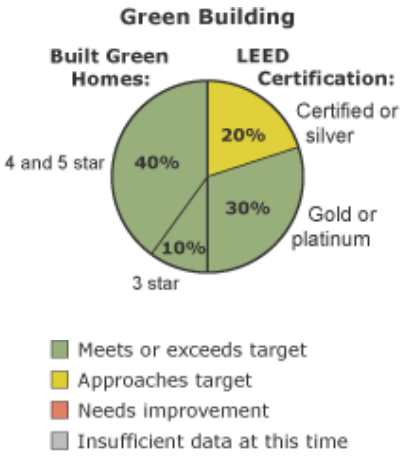
Updated: September 28, 2007

PERFORMANCE MEASURES - 2006 ARCHIVE

GREEN BUILDING

2006 Rating: ↑

About These Performance Measures: These measures represent the number of houses and commercial buildings being built in King County that meet certain environmental standards. The standards being used are the national Leadership in Energy and Environmental Design (LEED)™ rating system and the local Built Green certification program.



The U.S. Green Building Council (USGBC) developed the LEED™ rating system to provide a benchmark for the design, construction and operation of high performance commercial green buildings. LEED™ recognizes performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

The Built Green program is a partnership between the Master Builder's Association of King and Snohomish Counties, King and Snohomish Counties and the City of Seattle. New houses and communities building to Built Green standards must meet criteria from the program's checklist, including categories in site and water, energy efficiency, indoor air quality and material selection.

Number of Built Green™ homes certified at the 3- to 5-Star levels in King County

2006 results: 3,035 homes

2006 target: 2,125 homes

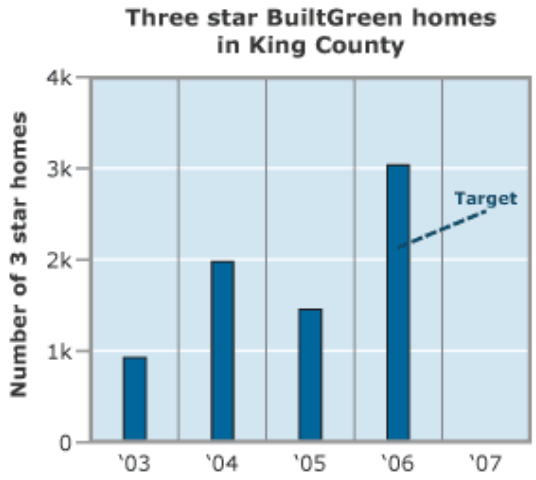
2007 target: 2,525 homes

Influencing factors: A high number (2,866) of 3-Star homes were built in 2006, as some developers of Built Green Communities have existing contracts with builders to build homes at the 1- to 3-Star levels (although in some cases builders are voluntarily going above the 3-Star level).

Strategy going forward: The Built Green Program plans to phase out the 1- and 2-Star levels by 2010.

Related Information

Sustainable Building Topics



Number of Built Green™ homes certified at four-star and five-star levels in King County

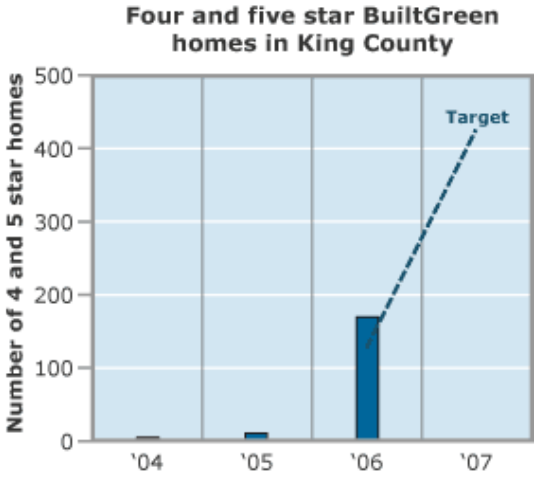
2006 results: 169 homes

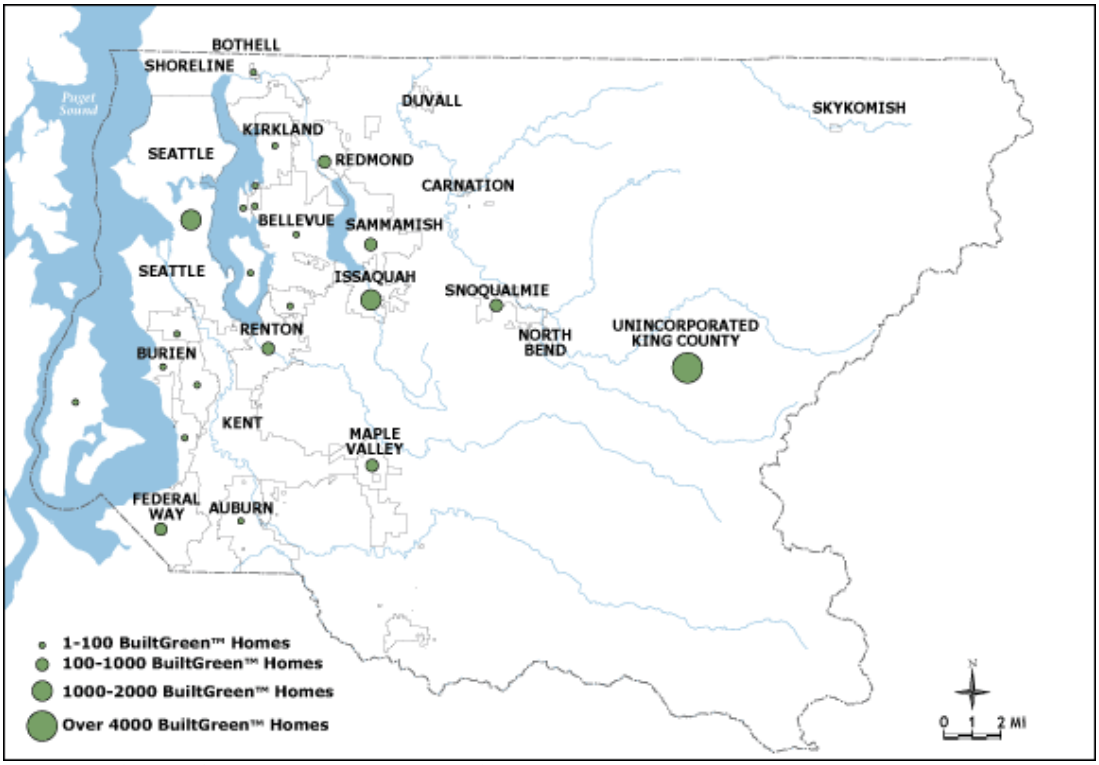
2006 target: 125 homes

2007 target: 425 homes

Influencing factors: A high number (168) of four-star homes were built in 2006, as some Built Green communities are now requiring builders to increase the level of certification from three star to four star.

Strategy going forward: In 2007, King County and Seattle Public Utilities will begin implementing new grant incentives for building four- and five- star homes.





Number of Built Green™ homes in King County
Click to download the PDF version.

Number of buildings in King County achieving a Leadership in Energy and Environmental Design (LEED) certified or silver rating

2006 results: 6 buildings

2006 target: target not identified

Influencing factors: Interest in green building increases as awareness of its benefits grows.

Strategy going forward: The King County GreenTools green building program offers incentives for developers to certify buildings to LEED™. In addition, the program offers technical assistance to support the development of more environmentally-friendly and healthy LEED™ buildings.

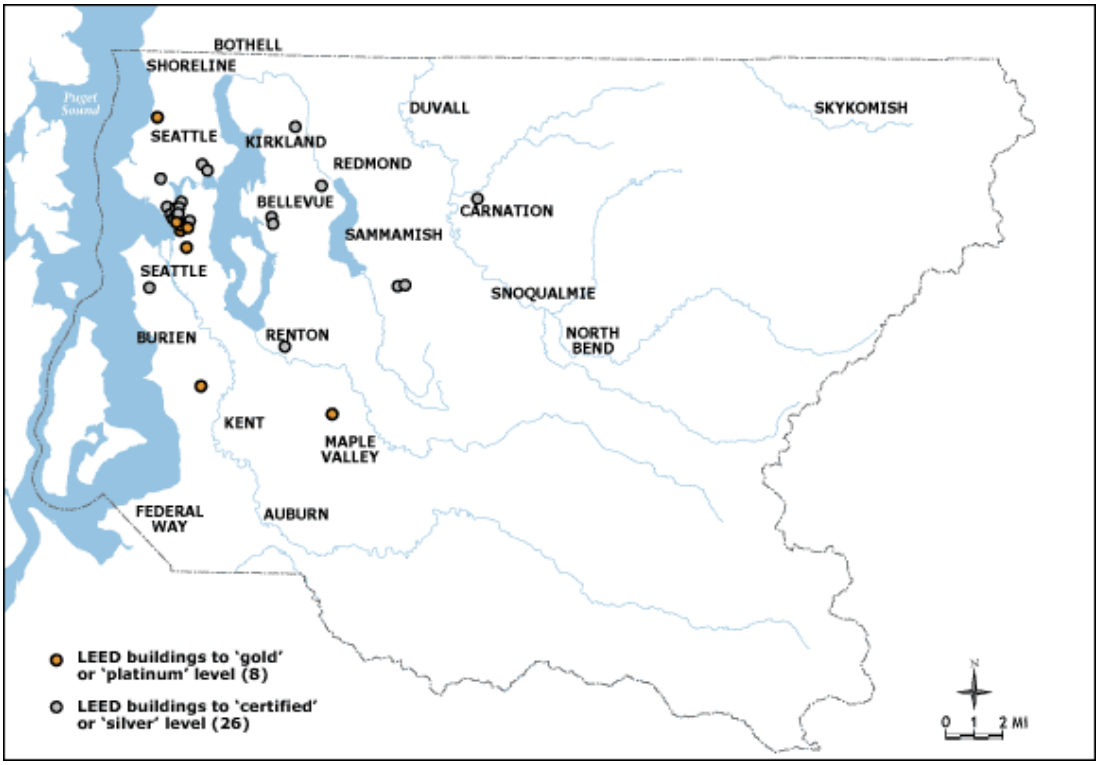
Number of buildings in King County achieving a Leadership in Energy and Environmental Design (LEED) gold or platinum rating

2006 results: 3 buildings

2006 target: target not identified

Influencing factors: Interest in green building increases as awareness of its benefits grows.

Strategy going forward: The King County GreenTools green building program offers incentives for developers to certify buildings to LEED™. In addition, the program offers technical assistance to support the development of more environmentally-friendly and healthy LEED™ buildings.



LEED Certified Buildings
2003 — 2006
Click to download the PDF version.

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Updated: July 7, 2008

PERFORMANCE MEASURES - 2006 ARCHIVE

CUSTOMER SATISFACTION

2006 Rating: ⇔

About this measure: Customer service is a cornerstone of good performance. DNRP uses customer feedback mechanisms to:

- Understand changes in customer preferences, priorities and price sensitivities
- Assess program strengths and weaknesses and perceptions of service levels
- Guide program adjustments based on finding

Many of our larger programs have had customer feedback mechanisms in place for several years. The customer survey findings are used to steer program adjustments and ensure that changes produce the intended results.

For the most part, DNRP divisions have selected specific groups of customers or neighboring business and residents to survey about services and programs. Some of our customer service questionnaires are self-administered and others involve the use of consumer research firms.

Solid Waste Division (SWD)

Transfer station customers

2006 results: 4.69 on a 1 - 5 scale
2007 target: 4.6 on a 1 - 5 scale

Influencing factors: Transfer station customer satisfaction was high due to continued good service at the transfer stations.

Strategy going forward: The same high level of service will continue in 2007.

Related Information

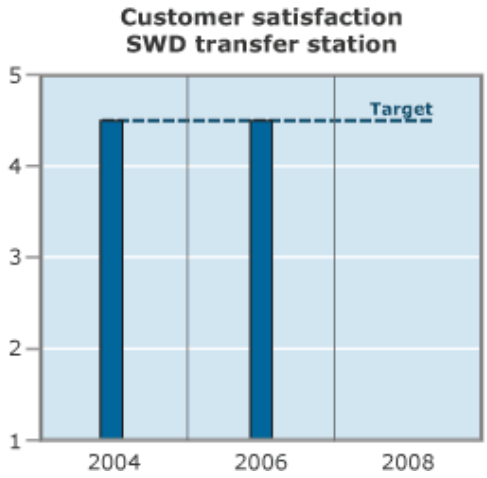
About DNRP

About SWD

About WLR

Parks Feedback

WLR's Customer Service Survey

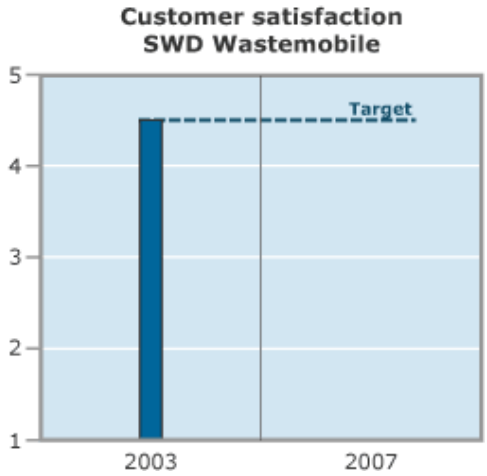


Wastemobile customers

2006 results: No survey was conducted in 2006.

Influencing factors: NA.

Strategy going forward: Funding for future surveys may be identified through the Local Hazardous Waste Management Program strategic planning process, to take place by June 2007.

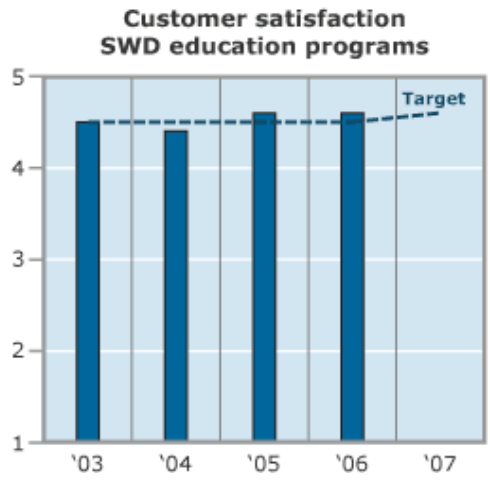


Solid waste education program

2006 results: 4.6 on a 1 - 5 scale
2007 target: 4.6 on a 1 - 5 scale

Influencing factors: In 2006, SWD reached 20,300 elementary students through an assembly program, and more than 10,000 elementary and secondary students through classroom workshops. Teachers said they found the program and workshops to be highly effective in educating students about how reducing waste and recycling benefit the environment.

Strategy going forward: Since student understanding of the materials was high in 2006, some changes in content will be made in 2007 to further challenge students. In addition, a new elementary assembly program will be developed, as the current one has reached the majority of schools.



Water and Land Resources Division (WLRD)

DNRP services and programs

About this measure: For the past 10 years, the Stormwater Services section has been collecting customer feedback to track, modify and improve how engineers and technicians treat and respond to customer needs. Customer service survey cards are sent out to residents who have registered drainage complaints with WLRD. The number of responses received correlates with rain events, when more complaints are received.

2006 results: 93 percent of customer service questions asked were responded to favorably
2007 target: 90 percent of customer services questions asked will be responded to favorably

Influencing factors: Training and education are offered to staff when performance measures fall below goals. When a survey card records dissatisfaction with a staff member, the issue is discussed with him or her.

Strategy going forward: WLRD's 2004 Business Plan put a strong focus on key program areas, such as stormwater services and Critical Areas Ordinance implementation. In 2005, WLR developed and implemented a customer feedback process modeled on the current stormwater services system.

Mid-2007, the division launched an on line customer services survey on its Web site and plans to send customer services surveys to people that have sent email inquiries. Information from this survey will supplement results from the drainage services survey reported here.

Technical Notes

For definitions and more detail.

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PERFORMANCE MEASURES - 2006 ARCHIVE

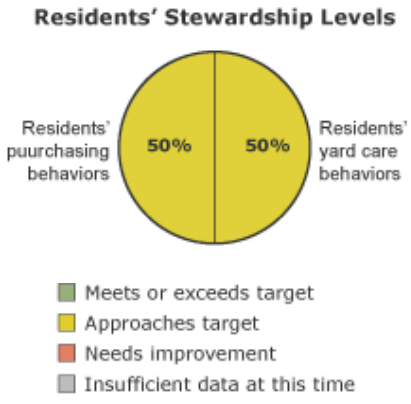
RESIDENTS STEWARDSHIP

2006 Rating: ⇔

About this measure: The King County Environmental Behavior Index (EBI) tracks and reports on the adoption of selected environmental behaviors of King County residents. In 2004 and again in 2006, 1000 randomly selected respondents in King County participated in a telephone survey and reported on their household's behaviors related to:

- Yard Care
- Recycling And Disposal
- Environmentally Friendly Purchasing

Understanding residents' awareness and behavior guides a more cost-effective targeting of outreach efforts and helps evaluate whether the efforts to improve these behaviors are making a difference.



The 2006 Environmental Behavior Index was conducted in spring of 2006. The findings about recycling and disposal information can be found under the performance measure on solid and hazardous waste management, which is here.

Below are details on the findings for the yard care and purchasing areas.

Residential Purchasing Behavior

2006 results: This year's survey indicates that purchasing of Compact Fluorescent Lightbulbs (CFLs) has climbed since the prior survey in 2004, though choosing less toxic cleaning products and considering the environmental impacts of purchasing decisions was steady or declining against the 2004 survey results.

Influencing factors: Many factors affect the purchasing decisions. Cost, product convenience, and availability are all influential. Public awareness about the impacts of these decisions on the health and environment do play an important role.

Strategy going forward: King County is advancing efforts to improve purchasing practices in several coordinated ways. The Solid Waste Division is emphasizing public education through the Eco-consumer program and is sponsoring Eco-Deals — a partnership with makers of green products to use coupons and discounts to promote green products.

The King County is also involved nationally, regionally, and locally with product stewardship efforts that require manufacturers to establish product collection programs. The "Take it Back Network" is expanding locations and opportunities to recycle fluorescent bulbs, electronics and other products.

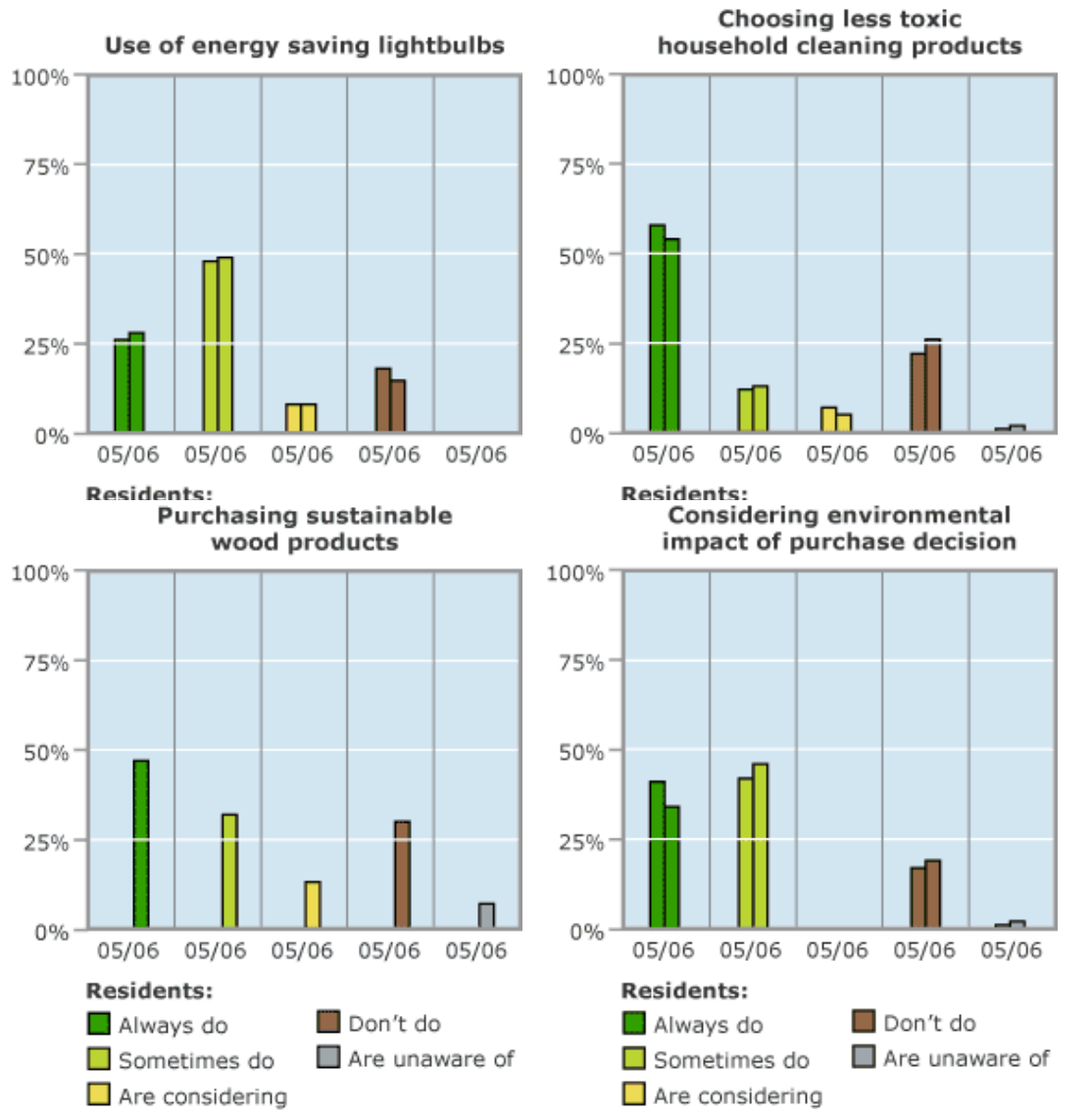
Related Information

Rural Stewardship

Forestry Stewardship

Farm Stewardship

EQ Environmental Quiz



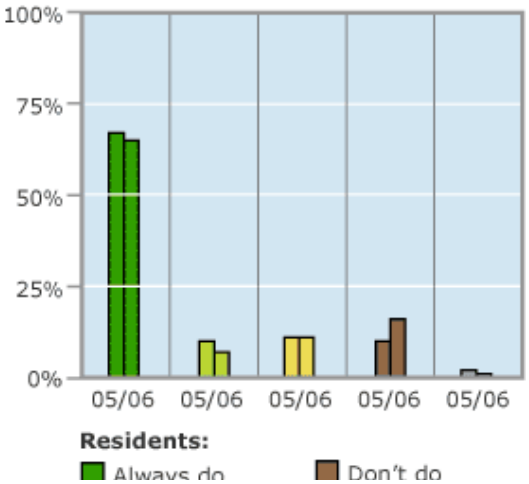
Residential Yard Care

2006 results: This year's survey of King County yard care behaviors indicates that residents have relatively "green" and improving behaviors regarding disposal of grass clippings and yard waste and proper treatment of treatment of trees and shrubs for insects/diseases. Yard care behaviors that are not "green" or improving include: Reducing lawn size, proper lawn fertilizing, using compost on lawns/gardens, and restoring or planting native plants vegetation on properties.

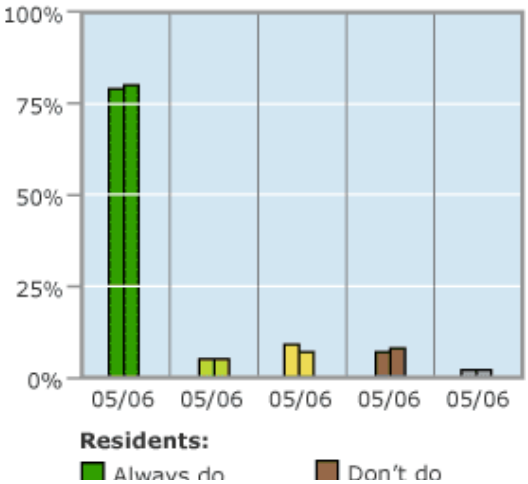
Influencing factors: Recycling yard waste and changes in pesticide (just not using them) use are fairly easy behaviors to change and improve—and there are many voices, messages and incentives to encouraging such change. Reducing lawns, using the right fertilizer, using compost and restoration with native plants, all involve more complex and costly changes and have fewer supporting messages or region wide programs explaining how to do it.

Strategy going forward: Water and Land Resources Division (WLRD) will continue to partner with local cities—adding three to four new cities in 2008—using Natural Yard Care and Naturescaping classes to help folks transition into smaller lawns, use of native plants and proper fertilizing and composting. The new online, "Northwest Native Plant Landscaping Guide" is promoted in conjunction with the trainings to provide technical assistance to residents, once they are home. A Natural Yard Care Web site created by our Online Solutions group in 2007, should be up and running by 2008. Moreover, the King County TV, Yard Talk show has and will feature more information on these topics.

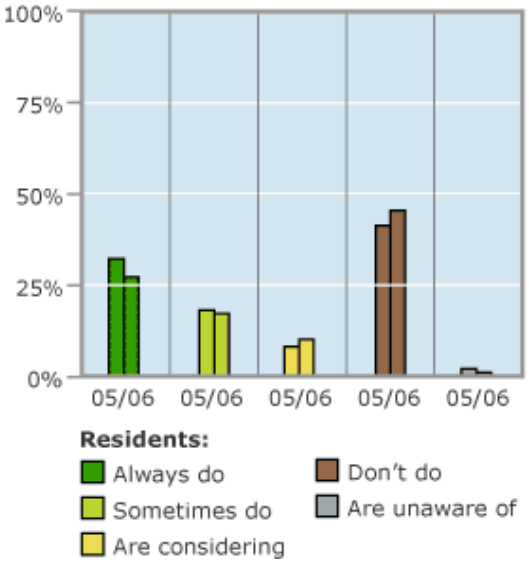
Proper watering of lawn



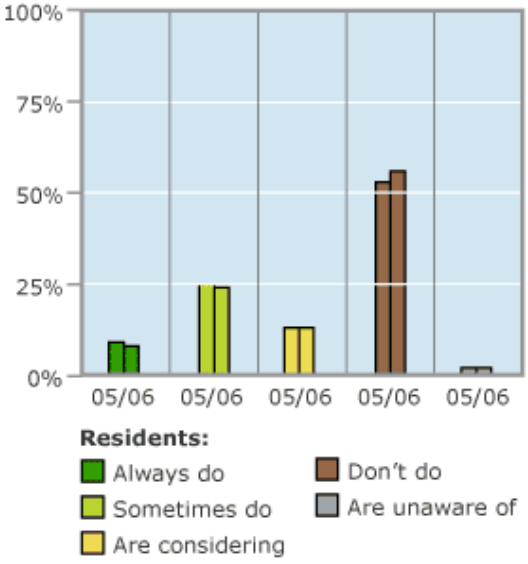
Proper disposal of grass clippings and yard waste



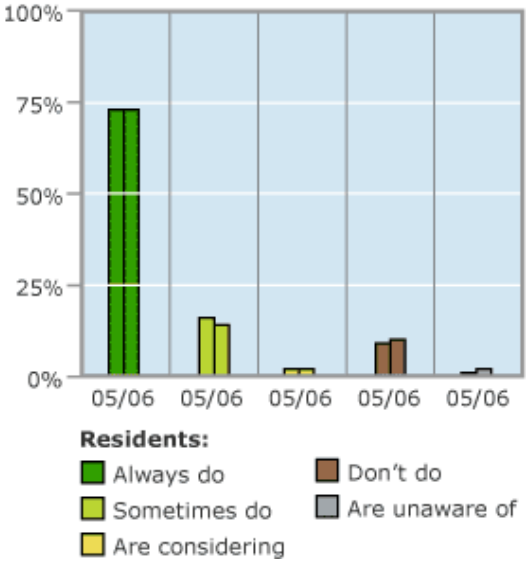
Use of compost on lawn or garden



Reducing lawn size and planting natives



Avoiding and reducing invasive plants



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Updated: September 28, 2007

PERFORMANCE MEASURES - 2006 ARCHIVE

VOLUNTEERISM

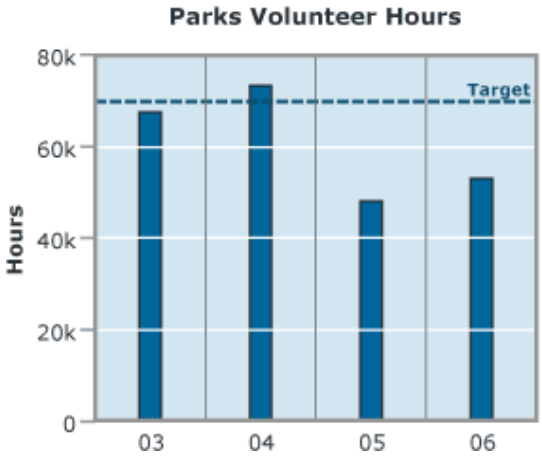
2006 Rating: ⇔

Parks Division

Volunteer hours

About this measure: Parks and recreation is an area of government that generates significant volunteerism. People volunteer on King County Parks and natural lands projects as a way to invest in their community, educate park visitors and provide basic enhancements to the park system and the environment. In addition to the added resources volunteers bring to park projects, people leave with a greater knowledge and appreciation for the park system. The degree of community involvement with the King County parks and natural lands systems is an important measure of how engaged the community is with these important public assets.

2006 status: 53,115 volunteer hours
2006 target: 70,000
2007 target: 70,000



Influencing factors: Volunteer hours increased in 2006 over 2005 numbers due to having a dedicated volunteer coordinator in place all year. Although down from 2004 due to updated methods in calculation, the increase in volunteer hours form 2006 to 2005 is important as it indicates the result of establishing longer-term partnerships with corporate and non-profit partners.

Strategy going forward: The program is expected to build upon increasing volunteer recruitment by focusing on key volunteer program elements such as:

- Improving and increasing volunteer recognition
- Strengthening existing partnerships with communities and organizations while building new partnerships; and
- Developing more consistent messaging and advertising.

Solid Waste Division (SWD)

Number of volunteers trained annually by the Master Recycler Composter (MRC) program

2006 results: 31 volunteers

Related Information

- King County Volunteer page
- The Dirt: DNRP Calendar of Events
- Volunteer at King County Parks
- Salmon Watchers Program
- Salmon Watcher Program, Training Slideshow
- King County Parks Volunteer Program

Influencing factors: It is unclear why attendance rose from 16 in 2005 to 31 in 2006, as program marketing did not change. Increased participation may be due in part from the division's increased efforts to promote recycling, including its residential recycling media campaign.

Strategy going forward: MRC Program marketing in 2007 will continue at the 2006 level.

Water and Land Resources Division (WLRD)

Salmon watcher program

About this measure: Salmon Watcher is a multi-jurisdictional effort focused at protecting a Pacific Northwest treasure and educating the community in the process. The eleven-year-old program involves volunteers watching streams for spawning salmon in King and Snohomish Counties. This effort mainly focuses on waters within the Lake Washington Watershed and on Vashon Island.

Influencing factors: The Salmon Watcher program is voluntary and new watchers enter the program upon their interest and request. Budget allocations and proactive recruitment of watchers can influence how many and the location of monitoring locations.

Status: As of 2006, 137 sites on 57 streams were watched in the program. The number of sites and their locations vary from year to year.

Strategy Going Forward: Continuing to educate property owners with salmon streams on their property by participating in the program about things they can do to improve aquatic habitats.

Technical Notes

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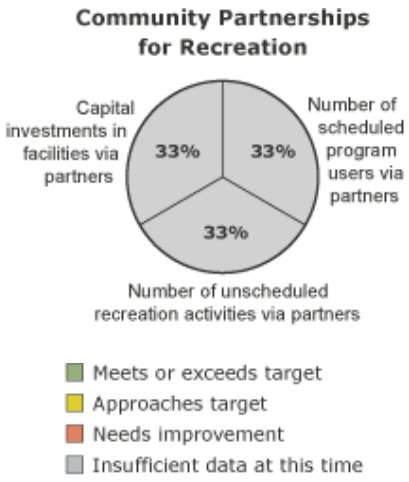
PERFORMANCE MEASURES - 2006 ARCHIVE

RECREATION THROUGH COMMUNITY PARTNERSHIPS

2006 Rating:

About this measure: Since 2002 Parks has been empowered to engage in 'good-government' initiatives and embrace non-traditional ways of doing business. This transformation from a centrally funded service provider to an entrepreneurial, performance-driven organization ensures that parks serve to enhance communities and our regional quality of life, even during tight fiscal times. This measure tracks the Division's success in developing, programming, and/or maintaining new public recreational opportunities through community-based partnerships using grants and land-use agreements under the Community Partnerships and Grant Programs.



Recreation Partnership sub-measures:

1. Number of users benefiting from structured recreational opportunities provided by community-base partners
2. Number of users benefiting from non-structured recreational opportunities provided by community-based partners
3. Financial match leveraged through community-base partners

2006 results: This measure was not developed in time to collect 2006 data

Influencing factors: The primary factors affecting the growth of new recreational opportunities provided by community-based partners are the availability of facilities and/or easily developable park land that is suitable for any given recreation activity and the amount of capital investment made via the Community Partnerships and Grants (CPG) Program for any given project.

The financial match leveraged through community based partners is primarily influenced by amount of the CPG grant and the wherewithal of the partner to fundraise, seek in-kind donations, develop volunteers, as well as, identify and apply the related professional skills of its members or stakeholders. The overall potential for matching resources is also dependent on the type of facility being developed, constructed, or operated, as well as the related programming's revenue-generating capacity.

Strategy going forward: King County Parks will continue to identify and/or create recreation opportunity development opportunities and match those opportunities with community-based partners through grants and land use agreements under the Community Partnerships and Grants (CPG) Program. King County Parks will also continue to identify community partnership opportunities within the annual capital budget prioritizing process.

Related Information

Community Partnerships and Grants

Propose a community project

Technical Notes

For definitions and more detail.

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Updated: September 28, 2007

PERFORMANCE MEASURES - 2006 ARCHIVE

CITY PARTNERSHIPS

2006 Rating: ⇔

Solid Waste Division (SWD)

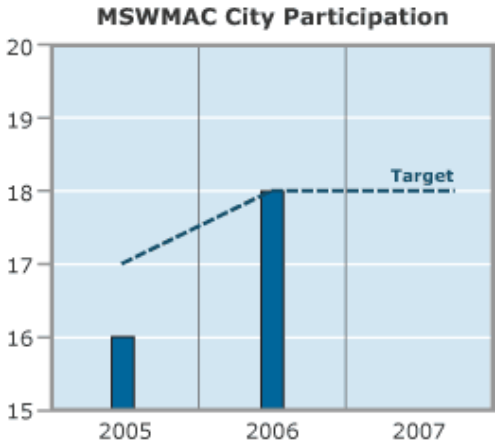
Number of cities that participate in the Metropolitan Solid Waste Management Advisory Committee (MSWMAC)

About this measure: MSWMAC was created to advise the County Executive, the Solid Waste Interlocal Forum and the Metropolitan King County Council in all matters relating to solid waste management, and to participate in development of the transfer and waste export system plan.

2006 results: 18 cities

Influencing factors: Cities are participating because there are important issues being discussed, including an update to the 2001 Comprehensive Solid Waste Management Plan.

Strategy going forward: The division will continue to collaborate with MSWMAC in 2007 as it works through the development of the Comprehensive Solid Waste Management Plan.



Water and Land Resources Division (WLRD)

Organizational Partnerships

Number of Signers/Partners to Inter-local Agreements

About this measure: This measure tracks the percentage of partners that have signed inter-local agreements with King County for salmon recovery plan implementation and groundwater services. Partners that sign inter-local agreements for salmon recovery plan implementation are organized

Related Information

- Salmon Recovery
- IRAC - Interagency Resource for Achieving Cooperation
- Join IRAC
- Puget Sound Fresh
- Groundwater Protection
- Become a Parks Partner
- Northwest Natural Yard Days
- Groundwater home page
- The Groundwater Story
- Map of Groundwater Management Areas
- Information about King County's Groundwater Management Areas
- WRIA information

around state defined geographical areas called Watershed Resource Inventory Areas or WRIA's. In addition to other jurisdictions and tribes the Army Corps of Engineers is included in the potential number of WRIA partners. Partners that sign inter-local agreements for groundwater services do so in only two of the five Groundwater Management Areas in King County — the Redmond-Bear and Issaquah Creek Basins.

Status: As of 2007, 49 of a potential 53 partners signed inter-local agreements with King County.

Target: The target going forward is to retain all 49 partners.

Influencing factors: King County's reputation as a service provider and partner in delivering services is crucial toward the success of this measure. Other jurisdictions, agencies and Indian Tribes are less likely to sign agreements to work with the county if it cannot deliver the services it has agreed to.

Strategy going forward: Ensure that agreements signed by King County are funded and implemented.

Wastewater Treatment Division (WTD)

2006 results: 5 signed as of end of 2006
2006 target: 33 contracts

Influencing factors:

- Seattle (42% of ratepayer base) wants greater contractual guarantees regarding growth paying for growth
- Some local agencies want greater role in wastewater capital program decision making

Strategies going forward:

- Continue negotiations with Seattle
- Continue to pursue extensions and amendments with individual agencies, primarily suburban cities, who are receptive to county's proposal

Technical Notes

For definitions and more detail.

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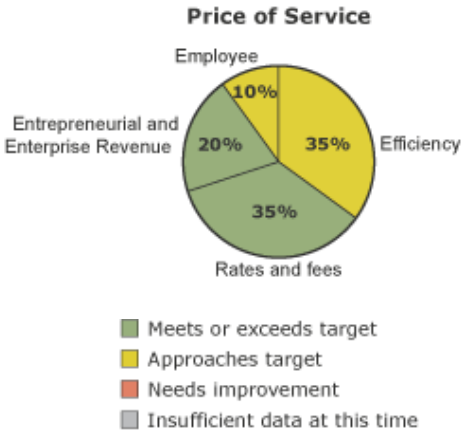
PERFORMANCE MEASURES - 2006 ARCHIVE

PRICE OF SERVICE MEASURE

2006 Rating:

This roll-up measure summarizes the degree DNRP is achieving its **Price of Service goal:**

Be efficient, effective and fiscally responsible to ensure ratepayer value.



2006 results

DNRP's rating for the performance measures that support this goal is a **green** — signifying results meeting or exceeding target.

Areas under this goal where DNRP performed well:

- Rates and fees; and
- Entrepreneurial and enterprise revenue.

Areas under this goal where DNRP performance approaches target:

- Efficiency; and
- Employee work practices and safety

Key influencing factors

Since 2002, the Parks Division has been empowered to engage in "good-government" initiatives and embrace non-traditional ways of doing business. This transformation from a centrally funded service provider to an entrepreneurial, performance-driven organization has help ensure that parks serve to enhance communities and the region's high quality of life, even during tight fiscal times.

The Wastewater Treatment Division has developed a productivity initiative pilot program, a joint labor and management effort within the division that could save ratepayers as much as $67 million over 10 years. The pilot program allows employee flexibility to apply some business practices used in private industry to cut operating costs, increase productivity and continue a high level of service and environmental protection for county residents.

The Solid Waste Division has evaluated a range of options for increasing efficiencies to support stable rates. Transfer stations have been reconfigured to reduce staffing requirements, while outreach and partnership efforts have led to higher levels of residential recycling and lower residential solid waste volumes.

Strategies going forward

All DNRP divisions will continue to explore and implement opportunities to increase operational efficiencies. Capital investments are being made with an eye toward energy efficiency and reducing operations and maintenance costs.

The Wastewater Treatment Division is expanding its pilot productivity initiative to include capital projects. The Solid Waste Division has plans to reduce contracting costs by bringing recyclable materials hauling in-house, while the Parks Division will continue building partnerships to enhance

Related Information

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revenue generation and reduce operation and maintenance costs.

DNRP is enhancing training efforts to further build workforce capacity.

More information about King County's Efficiency, Rates and Fees, Employees, and Entrepreneurial Revenue is available by continuing to the pages for these measures:

- Efficiency
- Rates and Fees
- Employees
- Entrepreneurial Revenue

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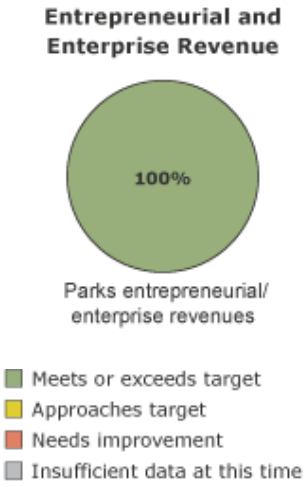
PERFORMANCE MEASURES - 2006 ARCHIVE

ENTREPRENEURIAL AND ENTERPRISE REVENUE

2006 Rating: ↑

About this measure: Since 2002 Parks has been empowered to engage in 'good-government' initiatives and embrace non-traditional ways of doing business. This transformation from a centrally funded service provider to an entrepreneurial, performance-driven organization ensures that parks serve to enhance communities and our regional quality of life, even during tight fiscal times. This measure tracks the Division's success in reaching its goal as established in the 2003 Parks Business Plan of increasing entrepreneurial revenue 5% each year from an established baseline.



2006 results: $2,800,000

2006 target: $2,200,000

Influencing factors: Parks team secured major corporate investments of more than $900K from Starbucks ($250K), Group Health ($100,000) and Cirque de Soleil ($550,000).

Strategy going forward: As the Department of Natural Resources and Parks develops strategies for long-term funding options, including the August 2007 renewal levy, Parks will maximize enterprise/entrepreneurial revenue along with exploring other strategies (efficiencies) to minimize the tax subsidy needed for active recreation facilities. The Division will continue to foster and develop corporate, non-profit and community-based partnerships in an effort to increase revenues and leverage Revenue Enhancement and Opportunity Fund capital dollars.

The Division continues to aggressively pursue mutually beneficial agreements through the Partnership for Parks initiative which generates revenue through the implementation of the following opportunities:

- Maximize Revenue from Existing Assets
- Corporate Partnerships, Gifts
- Aggressively Pursue Gifts, Bequests and Legacy Donations
- Real Estate Opportunities — Continue to evaluate long-term revenue opportunities on King County lands to benefit the Parks Division.

Technical Notes

For definitions and more detail.

Related Information

Parks & Recreation Partnerships

GIS Center Data Sales

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PERFORMANCE MEASURES - 2006 ARCHIVE

EMPLOYEES

2006 Rating: ⇔

About these measures: These measures look at the degree that targets are met for employee survey results and safety factors. The survey ratings detail trends in employee views on workplace practices, effectiveness, accountability, resource management and satisfaction. Employee accidents and lost time information are tracked by Human Resource personnel and help inform priorities for procedure and equipment improvements as well as training and safety education.

Ratings from 2006 employee survey

Satisfaction Index: 3.62 on a 1-5 scale, 5 as best
Workplace Practices Index: 3.21
Availability of Resources Index: 3.62
Role of Employee Index: 4.08

2008 employee rating targets

Satisfaction Index: 3.75 on a 1-5 scale, 5 as best
Workplace Practices Index: 3.5
Availability of Resources Index: 3.75
Role of Employee Index: 4.2

Most ratings were similar to prior years, although employees rated the following statements more favorably in 2006 than in the 2004 survey:

"Employee are held accountable for their performance at work," and

"Overall, I'm satisfied with the level of involvement I have in decisions that affect my work."

Influencing factors: Overall, the ratings of DNRP employees on these survey questions have remained steady since the survey was first conducted in 2000. The slight increase in ratings for the accountability question is likely a result of an increased focus on supervisory responsibilities and addressing employee performance and behavior. Improvements in supervisory skills, labor relations and perceptions of fairness have likely contributed to the improved rating on the job satisfaction question.

Strategy going forward: DNRP's Human Resource work plans continue to focus on strengthening performance management, accountability, supervisory development and collaborative relationship with unions. This focus was developed in response to the concerns and perceptions expressed through prior employee surveys.

2006 employee safety results

Total incidents with injuries: 191
Average days lost per injury: 16.5

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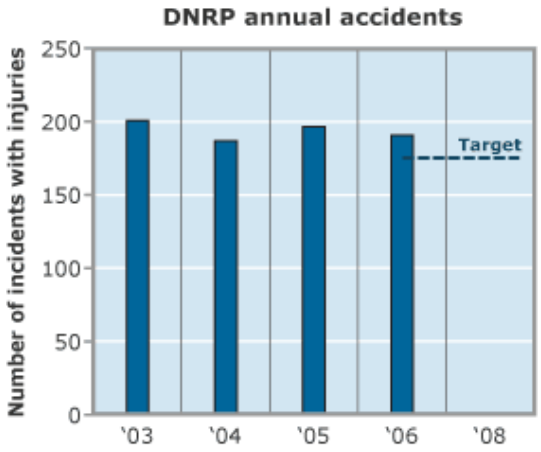
The number of "incidents with injury" is steady from prior years, although the number of days lost to injuries has been reduced from prior years.

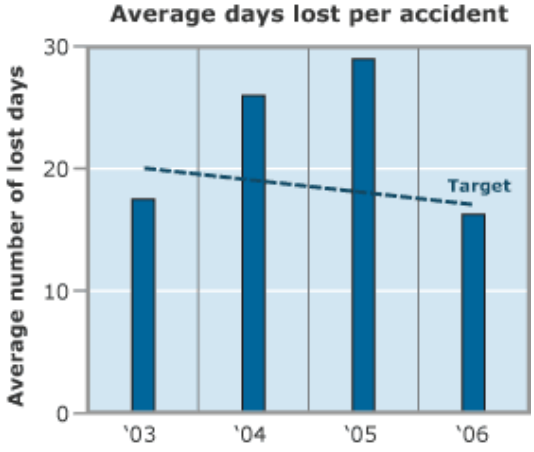
2006 targets: Total incidents with injuries to fewer than 175
Average days lost per injury: 17

Influencing factors: DNRP has almost 1,800 regular employees, many of whom perform challenging tasks, including operating and maintaining complex infrastructure systems that run continuously, such as wastewater treatment plants and a wide variety of heavy machinery. Employees also respond to floods, chemical spills and illegal dumping, while monitoring conditions in deep woods, fast-flowing rivers, high peaks and in Puget Sound.

The decline in lost days due to injuries can be primarily attributed to increasing light duty assignments for injured employees, procedure and equipment improvements, and increased safety ethic among field employees. The aging of DNRP's workforce also affects workplace accidents and injuries; as employees age, many of the physically demanding jobs create the likelihood of work-related injuries and chronic conditions.

Strategy going forward: DNRP will continue to build a safety ethic and make safety training a high priority. Emphasis will be placed on training related to safe procedures when performing tasks that lead to slip/trip hazards, or can create repetitive stress injuries. The King County Healthy Incentives program is instrumental in promoting a healthy lifestyle, which translates to employees who are more capable of performing physically demanding jobs.





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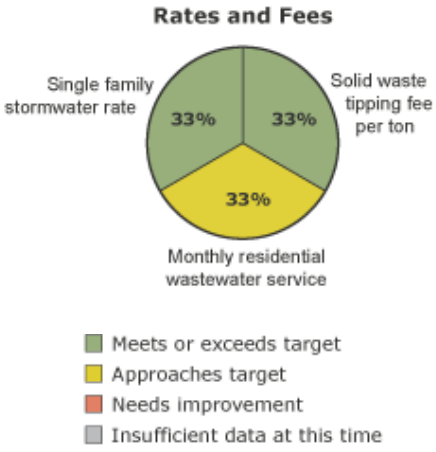
PERFORMANCE MEASURES - 2006 ARCHIVE

RATES AND FEES

About this measure: DNRP seeks for minimize rates and fees while maximizing value of service. Major programs track rates and fee against the level of inflation and benchmark against similar service providers. For inflation, we look at changes in the consumer price index over a 10 year time horizon.

Because benchmarking against similar service providers and jurisdictions is time intensive, this is done only every other year for most of our programs. Comparative programs are selected for proximity, range of services, and relative cost of doing business.

2006 Rating: ↑



Wastewater Treatment Division (WTD)

Monthly residential wastewater service fee increases vs. Consumer Price Index increases

2006 Wastewater Rate: $25.60

2006 target: Rate if it had risen by the rate of inflation from the 1996 rate: $25.18

Difference: 1.66 percent

Influencing factors: WTD is in a period of major construction activity as it invests in future service, including construction of the Brightwater treatment plant and conveyance system.

Strategy going forward: WTD has been implementing a productivity initiative to reduce operating costs and reduce future rate pressure. The rate was held at $25.60 for 2005 and 2006. The rate for 2007 and 2008 will be $27.95.

Rate vs. comparable agencies

Rate comparisons provide qualitative information. There are no targets established for this measure. The wastewater service rate in 2005 was greater than average fees from other jurisdictions.

There are significant differences among these utilities in the extent and level of services they provide. For example, some may not provide full secondary treatment or recycle biosolids as extensively as King County does. Additionally, the division is in a period of major construction activity as it invests in future service, including construction of the Brightwater treatment plant and its conveyance system.

WTD has implemented a productivity initiative program aimed at reducing operating costs and increasing savings to ratepayers. The productivity initiative allows employee flexibility to apply business practices used in private industry to cut operating costs, increase productivity, and continue a high level of service and environmental protection for county residents. A joint effort supported by labor, management and employees, the program has saved ratepayers $33 million in five years.

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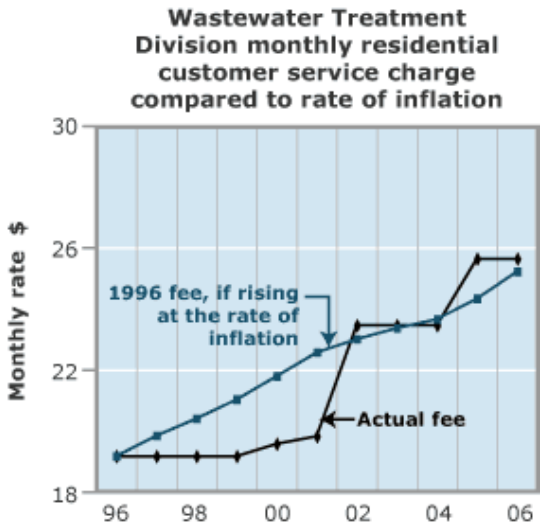
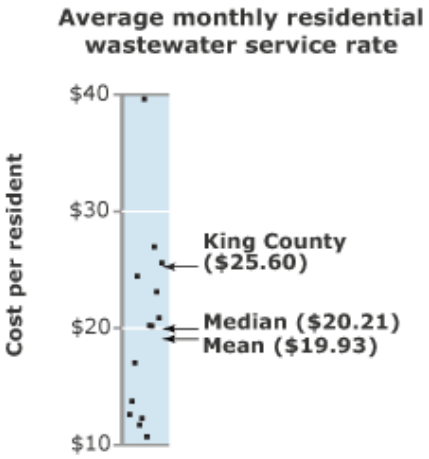




Solid Waste Division (SWD)

Tip fee compared to rate of inflation

2006 results: The SWD tip fee in 2006 was lower than if it had risen at the rate of inflation over the past 10 years.

Influencing factors: Many factors drive the level of rates and fees, including changes in the economy, demand for services, regulatory requirements and changes to the rate base.

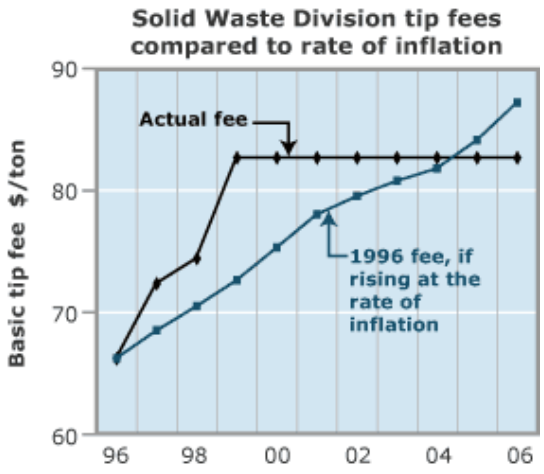
Strategy going forward: Solid waste tip fees will not be raised in 2007.

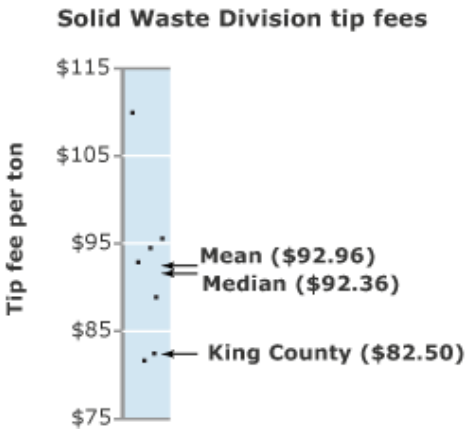
Rate vs. comparable agencies

2006 results: As of March 2007, the King County solid waste tip fee of $82.50 per ton was below the mean ($96.95) and the median ($98.36) of the tip fees of seven comparable jurisdictions, including King County.

Influencing factors: SWD rates did not change, while rates for other jurisdictions either remained steady or increased slightly.

Strategy going forward: Solid waste tip fees will not be raised in 2007.





Water and Land Resources Division (WLRD)

Comparison of surface water management fees with inflation

2006 Results: King County's Surface Water Management Fee is not linked to inflation. Since 2002 inflation, based on CPI has increased by an estimated 9%. King County Office of Management and Budget projections suggest that inflation will rise by another 7% through 2009. The King County Council approved an increase to the surface water management fee in 2007 to meet rising costs from inflation and other regulatory demands.

Influencing factors: Many factors drive the level of rates and fees, including storm events that induce flooding and other natural disasters, changes in the economy, additional development, demands for natural resource management services, increased regulatory requirements and changes to the rate base.

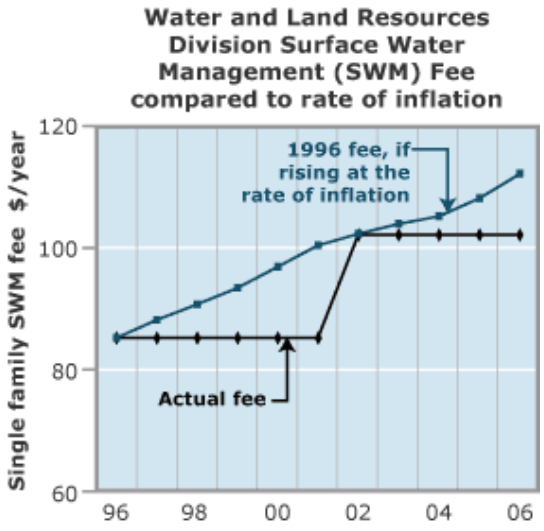
Strategy going forward: Surface Water Management Fees were raised in 2007 to meet impacts of inflation however regulatory costs related to compliance with the National Pollutant Discharge Elimination System Permit are increasing while Surface Water Fee revenue is decreasing due to annexations and incorporations. Prioritizing how surface water revenues are spent will be an important task for the Water and Land Resources Division over the next several years.

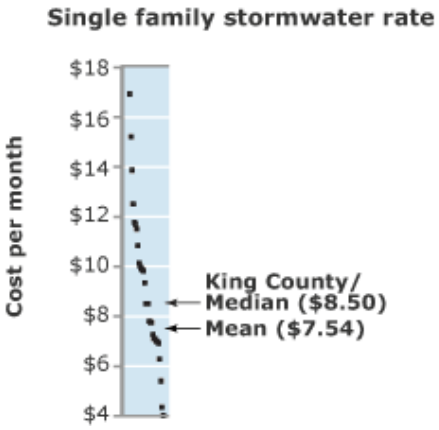
Rate vs. comparable agencies

2006 Results: King County's surface water management fees were just under the mean of what other jurisdictions charge.

Influencing factors: King County offers one of the most robust surface water management programs in the region. As a large jurisdiction it is governed by Phase I of the National Pollutant Discharge Elimination System Permit by the State Department of Ecology to comply with the federal, Clean Water Act. Permit requirements this and for the next six years are more stringent as the state is grappling with declines in the health of its surface waters and the Puget Sound.

Strategy going forward: Much work is being done to determine how to comply with regulatory requirements amidst dramatic declines in revenue. Stormwater services will look to making its operations more efficient and King County managers, the Executive and the Metropolitan King County Council will be faced with finding alternative funding sources or eliminating programs previously funded by the surface water management revenues.





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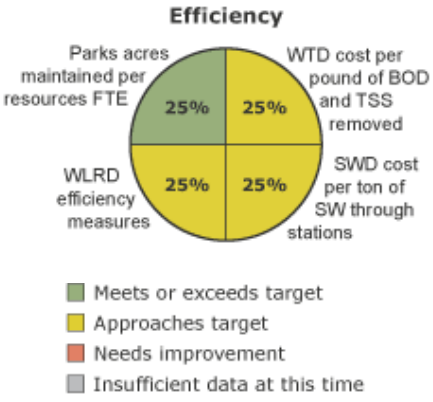
PERFORMANCE MEASURES - 2006 ARCHIVE

EFFICIENCY

2006 Rating: ⇔

Wastewater Treatment Division (WTD)

Cost per pound of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) removed



About this measure: WTD measures efficiency in terms of operating costs per pound of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) removed during the treatment process. BOD and TSS are the primary pollutants that the treatment process is designed to remove, and these pollutants are directly monitored in the plants' water quality permits.

2006 results: $0.3425

2006 target: (adjusted for inflation) = $0.3234

Influencing factors:

Strategy going forward: WTD seeks to reduce operating costs through its productivity initiative, an effort to improve the efficiency of the entire wastewater treatment program while maintaining high quality standards and service delivery.

Solid Waste Division (SWD)

Transfer station operating costs per ton of solid waste

About This Performance Measure: This measure represents the total operating costs of the Solid Waste Division's 10 geographically dispersed transfer facilities (eight transfer stations and two drop boxes) per ton of solid waste disposed.

2006 results: $11.02 per ton.

Influencing factors: Costs increased higher than projected in 2006 primarily due to higher labor costs following implementation of a labor agreement.

Strategy going forward: Management will continue to operate in the most efficient manner in order to control operating costs, including labor, wherever possible.

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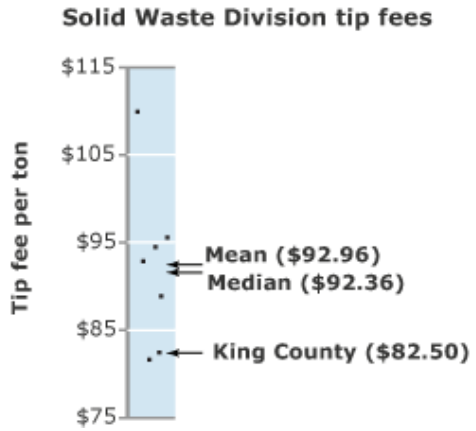

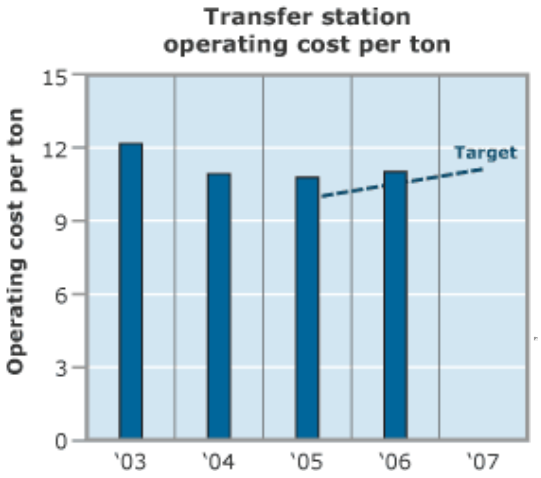

Water and Land Resources Division (WLRD)

Efficiency Measures

About this measure: The efficiency "sentinel" tasks as representative of three Water and Land Resources Division's principle revenue sources are measured here. Water and Land Resources administers a multitude of programs funded from over forty different sources, making it impossible to quantify a single all-encompassing "outcome" from which to derive efficiency of production.

Noxious Weeds

About this measure: Over the past two years, the Noxious Weeds Program has seen a reduction in the cost per unit area of noxious weed infestations controlled. This is because a larger area of noxious weeds has been kept under control.

Noxious Weed Program expenditures / area of infestations controlled = cost per unit area infestations controlled

2006 results: $10.68 per square foot

Influencing factors: Efficiency gains can be explained by increases in voluntary, citizen weed control compliance due in part to program education and outreach activities. Economies of scale contribute because it is cheaper to keep fewer, larger infestations under control than a multitude of smaller ones. In 2004, 3859 infestations covering an area of 6,688,651 square feet were controlled. In 2005, 3772 infestations covering an area of 9,872,000 square feet were controlled. So in 2004, there were fewer infestations covering a smaller area that were more expensive to control than more infestations covering a larger area in 2005.

Strategy going forward: The program will continue to look for and control large infestations but expects a fair amount of fluctuation in the efficiency of its control efforts over the next several years. Marketing, education and citizen reports of infestations have much potential to help the program gain efficiencies.

Hazardous Waste

About this measure: The EnviroStars Program is a customer incentive program that recognizes businesses that generate less hazardous waste. This measure provides a cost to the program for each business recognized in the program. Costs used to calculate this efficiency include salary and benefits, administrative, overhead and program costs such as advertising.

EnviroStars Program costs / number of EnviroStars-recognized businesses

2006 results: $499 per Enviro-Star recognized business.

Influencing factors: In 2005 the program was able to become more efficient and the per business cost of EnviroStar recognition decreased by $245 to $547 per recognized business.

Strategy going forward: These efficiency gains are expected to level off, as they were attributed to the program reaching maturity. The Seattle-King County Local Hazardous Waste Management Program has recently conducted a strategic plan and is moving toward a new focus. As a result, this measure could be altered in the coming year to more accurately reflect effectiveness in delivering work in new program areas.

Surface Water Management

About this measure: Maintaining surface water management facilities is one of the primary responsibilities of surface water fees. Costs used to calculate the efficiency of this activity include labor and mowing. Facility maintenance work is performed by King County's Roads Division in the Department of Transportation.

Facility maintenance/mowing costs (WLR & Roads) / number of facilities maintained

2006 results: $769.07 per surface water management facility. **2005 results:** $1,013 per surface water management facility.

Influencing factors: Negotiating labor practices, machine usage and maintenance schedules with the Roads Division at the Department of Transportation has a major influence over the efficiency of facility maintenance.

Strategy going forward: This measure will be refined over the next year to account for differences in maintenance schedules and demands that vary by facility type, age and design.

Parks Division

Ratio of employees to acres maintained

About this measure: This efficiency measure is a ratio of the number of full-time employees in the Resource Section to the total number of park acres maintained by these employees

2006 results:	91 FTE's in the Resource Section
	Total Acres = 25,694
	282 acres per FTE
2006 target:	282
2007 target:	282

Influencing factors: Because staffing levels and land inventory are fairly stable and predictable for the next year, the main influencing factors have to do with the quality and type of maintenance Parks staff are able to perform.

1. Public and employee safety (for example: injury may result if maintenance action not taken);
2. Mandated requirements subject to potential fines if not performed (for example: various required permits, sensitive areas protection, ESA, integrated pest management, drainage maintenance);
3. Scheduled (revenue generating) use of park assets (for example: athletic leagues, picnics, weddings, large special events, revenue would be lost if maintenance action is not taken);
4. High community expectations and visibility projects (for example: East Lake Sammamish Trail, new athletic fields or community centers);
5. Storm damage and other natural event problems to the park system;
6. Preserve and protect projects (for example: roof repairs or field maintenance, if not done, further damage occurs); and
7. Unscheduled public use (for example: trail use, drop in athletic play, dog-off leash use).

Strategy going forward: Under the constraints of the levy that expires at the end of 2007, Parks plans to acquire key properties while maintaining current staffing levels. By increasing volunteer efforts through our programs, such as Park Ambassadors, Adopt-a-Park, and Community Partnership Grants, and continuing our partnerships with agencies, such as the Washington Trails Association and Earthcorps, we hope to continue to improve our existing service levels. Prior to acquisitions, funding to support the annual cost of the land management plan will be identified. This type of pre-acquisition evaluation will avoid costly liabilities, such as environmental hazards (including mine shafts, methamphetamine labs, and noxious weed infestations), and recognize existing inappropriate public uses, which may require costly management.

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For definitions and more detail.

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- Other reliable environmental data sources for King County
- Adjustments to the weightings for indicators and performance measures
- Mistakes to fix

Share your thoughts by sending an e-mail to Richard Gelb, DNRP Performance Measurement Lead, at richard.gelb@kingcounty.gov so your input can be considered for subsequent updates.

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